



Environmental Impact Statement

for the

Blue Vista Development Town of The Blue Mountains, Grey County

Prepared for
Royalton Homes

Prepared by
Hensel Design Group Inc.

March 2019





March 5, 2019

Mr. Samer Chaaya
Royalton Homes
10114 Hwy 26
Unit #4
Collingwood, ON L9Y 3Z1

Dear Mr. Chaaya:

Re: EIS for Osler Bluff Road, Town of The Blue Mountains, Grey County

On behalf of the project team, Hensel Design Group Inc. (HDG) is pleased to submit the Environmental Impact Statement (EIS) related to the proposed Blue Vista Development located on Osler Bluff Road, Town of The Blue Mountains, Grey County. This report will also be forwarded to the applicable review agencies. The scope of this EIS has fully considered the requirements of the Provincial Policy Statement, Town of The Blue Mountains and Grey County Official Plans using the information available to date.

HDG has concluded that the development proposal is feasible from an environmental perspective in so long as the mitigation measures outlined herein are implemented.

We have greatly appreciated being a part of your team. If you should have any questions or concerns regarding this submission, please do not hesitate to contact us.

Sincerely,

HENSEL DESIGN GROUP INC.

A handwritten signature in black ink, appearing to read "Michael J. Hensel", is written over a horizontal line.

Michael J. Hensel, OALA, CSLA
Senior Development Consultant

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1. Introduction

Hensel Design Group Inc. (HDG) was retained by Royalton Homes to prepare an Environmental Impact Study (EIS) related to the proposed Blue Vista Development located on Osler Bluff Road in the Town of The Blue Mountains, Grey County. HDG is part of a multi-disciplinary team which includes Travis and Associates (planning), C.C. Tatham & Associates Inc. (engineering), and HDG (environmental). Each of these consultants have prepared studies and/or plans to support the planning application. This report prepared by HDG should be read in conjunction with the works of the other project team members.

1.1 Site Location

The subject lands are described as Concession 1 South, Part Lot 17. The subject lands are located on the west side of Osler Bluff Road and north of Mountain Road. The lands to the north side of the subject lands are part of the existing Monterra Golf Course and the lands to the east of the subject lands are residential lands. Lands to the west are currently under construction for residential development and the Scandinave Spa is located on the lands to the south (See Figure 1).

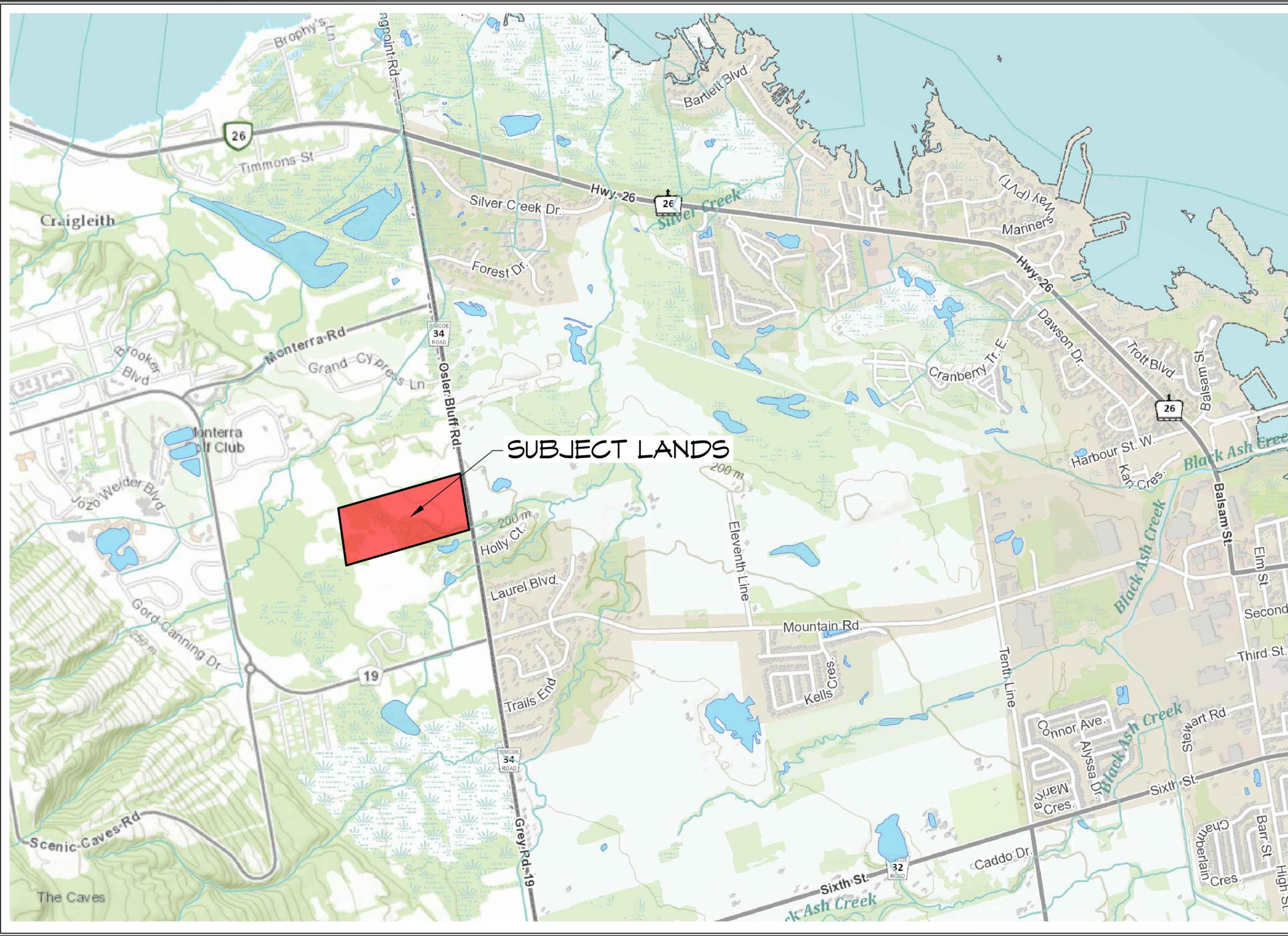
1.2 Study Goals and Objectives

The purpose of this EIS is to provide a detailed description and background review of the physical and ecological characteristics of the natural heritage features from the subject property including the functions, significance and sensitivity using information available to date. Additionally, this report will address potential impacts to these features and outline how impacts can be minimized or mitigated. In consideration of this information, recommended protection and/or mitigation measures will ensure that the proposed development conforms to the requisite policies as outlined herein.

The policies and technical requirements of the Official Plans for The Blue Mountains and Grey County as well the Niagara Escarpment Commission (NEC), Nottawasaga Valley Conservation Authority (NVCA), Grey Sauble Conservation Authority (GSCA) and the Provincial Policy Statement (PPS) have been considered as part of this study.

The goal of this EIS is to provide the following:

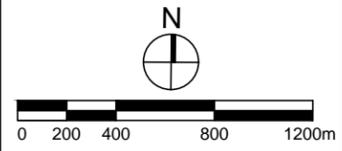
- a) Ensure that the proposed development can proceed in a manner that will not result in negative impacts to significant ecological features and functions.
- b) Demonstrate conformity to the Provincial Policy Statement, the Grey County Official Plan, the Town of The Blue Mountains Official Plan, and the Conservation Authorities Act.



SUBJECT LANDS

LEGEND

SUBJECT LANDS



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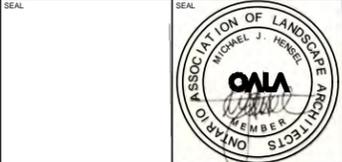
THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY ERRORS OR OMISSIONS TO THE CONSULTANT BEFORE COMMENCING OR PROCEEDING WITH ANY WORK.

DO NOT SCALE THIS DRAWING.

Hensel Design Group
 Advancing Sustainable Development Solutions
 372 Peel St., Collingwood, Ontario, L9Y 3N4
 Phone: 705-443-8394 Fax: 705-443-8494

BLUE VISTA
 Town of The Blue Mountains, Ontario

TITLE
LOCATION MAP



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Drawn by: DC	
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Job No.:	

Fig.1

The specific objectives that will be completed as part of this EIS include the following:

- a) Provide an evaluation of the ecological features and functions of the subject property detailed background review. Complete in-season field investigations to identify and map any and all significant features (i.e. any significant habitat for Species at Risk), key ecological attributes, and sensitivities of the subject property.
- b) Confirm the appropriate development proposal, buffers and setbacks to adjacent features through an evaluation of the ecological features and functions.
- c) Determine the need for buffers for any and all natural features and provide recommendations for the mitigation and protection of natural heritage features and functions.
- d) Complete a detailed assessment of potential impacts to natural heritage features;
- e) Identify appropriate mitigation that minimizes the potential impact of each component of the development proposal; and
- f) Assess long term and cumulative effects of the proposed development along with adjacent land use.

2. Natural Heritage Policy

Provincial and municipal planning policies guided the preparation of natural heritage constraints and opportunities for the proposed development on the subject property. Existing background policy information sources were reviewed to identify any mapped natural heritage features that may occur on or within 5km to the subject property. In addition, a review of background data from various sources pertaining to the subject property and adjacent lands was also completed. These policies and background information sources include:

- a) Ontario Provincial Policy Statement (2014);
- b) Grey County Official Plan (2013);
- c) Town of The Blue Mountains Official Plan (2016);
- d) Nottawasaga Valley Conservation Authority - Ontario Regulation 172/06 (2006);
- e) Grey Sauble Conservation Authority - Ontario Regulation 151/06 (2006)
- f) Niagara Escarpment Plan (Office Consolidation 2018)
- g) Ministry of Natural Resources Natural Heritage Reference Manual (2010) and the Significant Wildlife Habitat Technical Guide (2000);
- h) Ontario Natural Heritage Information Centre database (2019) (www.nhic.mnr.gov.on.ca);
- i) The Ontario Breeding Bird Atlas (www.birdsontario.org);
- j) The Species At Risk Public Registry (www.sararegistry.gc.ca);
- k) Ontario *Endangered Species Act* (2007);
- l) Federal *Species At Risk Act* (2002);
- m) Aerial photographs.

2.1 Provincial Policy Statement (PPS)

Part III of the PPS notes that “*The Provincial Policy Statement supports a comprehensive, integrated and long-term approach to planning, and recognizes linkages among policy area.*”

The PPS states that the “***provincial policy-led planning system recognizes and addresses the complex inter-relationships among environmental, economic and social factors in land use planning.***”

According to the Provincial Policy Statement (2014), various provincially defined natural features shall be protected for the long term. Relevant sections state:

“2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas, surface water features and ground water features.*”

2.1.4 *Development and site alteration* shall not be permitted in :

- a) *significant wetlands* in Ecoregions 5E, 6E and 7E, and
- b) *significant coastal wetlands*

2.1.5 *Development and site alteration* shall not be permitted in:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E;
- b) *significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary’s River);
- c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary’s River);
- d) *significant wildlife habitat*; and
- e) *significant areas of natural and scientific interest*; and
- f) coastal wetlands in Ecoregions 5E, 6E and 7E that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no *negative impacts* on the natural features or the *ecological functions*.

2.1.6 *Development and site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial and federal requirements*.

2.1.7 *Development and site alteration* shall not be permitted in *habitat of endangered species and threatened species*, except in accordance with *provincial and federal requirements*.

2.1.8 *Development and site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.4, 2.1.5 and 2.1.6 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.”

2.1.1 Relevance to the Development Proposal

This development proposal shall be consistent with policy statements made under the Act.

2.2 Grey County Official Plan

According to Section 1.6.3 of the County of Grey Official Plan, the objectives with regards to the environment are to identify lands with environmental constraints and/or the presence of sensitive natural heritage features and establish policies to promote the protection, preservation, conservation, maintenance and enhancement of such areas.

The Official Plan establishes policies to ensure only appropriate and compatible development occurs on lands having inherent environmental hazards such as poor drainage, flood susceptibility, erosion, steep slopes, or any other condition, which could be hazardous to development or where development would be hazardous to the environment. The policies will also protect the areas of ground water recharge, cold-water streams, lakes and other surface waters for their habitat, recreational, ecological and drinking water benefits. It considers the cumulative effects of new development on the natural environment and surrounding land uses. Section 2.8 of the Official Plan addresses Natural Environment policies including Significant Woodlands. Section 2.8.4, Significant Woodlands notes the following:

"In order to be considered significant a woodland must be either greater than or equal to forty (40) hectares in size outside of settlement areas, or greater than or equal to four (4) hectares in size within settlement area boundaries. If a woodland fails to meet those criteria, a woodland can also be significant if it meets any two of the following three criteria:

- (a) Proximity to other woodlands i.e. if a woodland was within 30 meters of another significant woodland, or*
 - (b) Overlap with other natural heritage features i.e. if a woodland overlapped the boundaries of a Provincially Significant Wetland or an area of natural and Scientific Interest, or*
 - (c) Interior habitat of greater than or equal to eight (8) hectares, with a 100 metre interior buffer on all sides.*
- (1) No development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an Environmental Impact Study, as per section 2.8.7 of the Plan, that there will be no negative impacts on the natural features or their ecological functions. The adjacent lands are defined in section 6.19 of the Plan.*

Notwithstanding the above, projects undertaken by a Municipality or Conservation Authority may be exempt from the Environmental Impact Study requirements, provided said project is a public work or conservation project.

- (2) *Notwithstanding paragraph (1), where it can be proven that a woodland identified as significant has ceased to exist, or ceased to exhibit characteristics of significance, prior to November 1, 2006, an Environmental Impact Study will not be required. Site photographs or a site visit by a qualified individual may be necessary to determine that a woodland no longer exists.*
- (3) *Notwithstanding paragraph (1), tree cutting and forestry will be permitted in accordance with the County Forest Management By-law.*
- (4) *Notwithstanding paragraph (1) and (3), fragmentation of significant woodlands is generally discouraged.”*

2.2.1 Relevance to the Development Proposal

A portion of the wooded area of the subject and adjacent lands are identified as Significant Woodlands on Appendix B – Map 2 of the Official Plan (See Appendix A).

2.3 Town of The Blue Mountains Official Plan

The Goals and Objectives outlined in Section A3 of the Official Plan provide a general guideline for the review of all proposed development. All goals, objectives and policies of the Official Plan are designed to reflect the municipality's long-term vision for the future, and to have regard for the Provincial Policy Statement, not in conflict with the Niagara Escarpment Plan, and also in conformity with the County of Grey Official Plan.

According to Section A3.2.2 it is a strategic objective of the Official Plan to:

1. Protect *significant* natural heritage and hydrologic features and their associated habitats and *ecological functions*.
2. Ensure that an understanding of the natural environment, including the values, opportunities, limits and constraints that it provides, guides land use decision-making in the Town.
3. Make planning decisions that contribute to the protection, conservation and enhancement of water and related resources on a watershed and sub watershed basis.
4. Maintain and *enhance* surface and *groundwater resources* in sufficient quality and quantity to meet existing and future needs on a sustainable basis.
5. Discourage the loss or fragmentation of *significant* woodlands and the habitats and *ecological functions* they provide.
6. Recognize that an interconnected system of open spaces and natural heritage features contributes to the health and *character* of a community.

7. Prohibit the loss or fragmentation of *Provincially Significant Wetlands* and *significant* habitat of endangered and *threatened species*.
8. Maintain and *enhance significant* areas of natural and scientific interest, *significant* valleylands, escarpment slopes and related landforms, and *significant wildlife habitat* areas.
9. Promote and establish programs to increase the forest cover of the Town.

Section B5.2 addresses the policies specific to Natural Heritage Features.

2.3.1 Relevance to the Development Proposal

The Official Plan Appendix 1 Constraints Mapping identifies a portion of the subject lands as Significant Woodlands (See Appendix B).

2.4 Nottawasaga Valley and Grey Sauble Conservation Authorities

The subject lands fall within the watersheds of both the NVCA and the GSCA and as such this report takes both boundaries into account. Ontario Regulations 172/06 (NVCA) and 151/06 (GSCA) are the Generic Regulations of the Conservation Authorities Act, which came into effect in May 2006, specific to the regulation of development, interference with wetlands, and alterations to shorelines and watercourses. Under this regulation, hazardous lands, wetlands, shorelines and areas susceptible to flooding, and associated allowances within the Authority are delineated by the "Regulation Limit" shown on maps that are filed by the Authority. HDG acquired NVCA and GSCA mapping of the Hazard Regulation Limit(s) for the subject lands. The Generic Regulation layer indicates that the areas adjacent to the existing watercourses located within the subject lands are a potential flood and meander hazard.

Regulations 172/06 and 151/06, '*Development, Interference with Wetlands and Alteration to Shorelines and Watercourses Regulation*', requires that a permit be obtained from the Authority when undertaking any of the following:

- Straightening, changing, diverting or interfering in any way with the existing channel of a river, creek, stream or watercourse or interfering in any way with a wetland;
- Development adjacent or close to the shoreline of inland lakes, in river or stream valleys, hazardous lands, wetlands or lands adjacent to wetlands.

Development as defined by the Conservation Act includes:

- The construction, reconstruction, erection or placing of a building or structure of any kind, or changes to an existing building or structure to alter its size or purpose;
- Site grading;
- The temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere.

The intent of the permit process is to ensure that activities in these areas will not result in a risk to public safety or property damage and that the natural features are protected through the conservation of land.

Under Ontario Regulations 172/06 and 151/06 Section 2, development is prohibited in or on the areas within the NVCA or GSCA jurisdictions that are prone to flooding or meander hazards. The flood hazard line of the Regulation Limit is typically associated with the stable top of bank or regulatory floodplain plus a setback to facilitate access to the top of bank. Similarly, the meander belt line is depicted as the maximum extent of the predicted meander belt of the watercourse plus an allowance of 15m on each side. The Regulation Limit follows the maximum extent of the combined floodplain and meander belt limits. Under this regulation, written permission to develop within prohibited areas or alter a watercourse is required. Acquisition of this permission requires the completion of an Application for Permission to be filed with the Authority. It should therefore be assumed that an authorization would be required for any fill or alterations within the Regulation Limit area. If the extent of the fill or alterations identified in the Development Plan were deemed significant, an Environmental Impact Study may be triggered.

2.4.1 Relevance to the Development Proposal

A very small portion of the southeast corner of the subject lands are within the NVCA Regulation Limits (See Figure 2) therefore requiring the EIS herein.

2.5 Niagara Escarpment Commission

The *Niagara Escarpment Planning and Development Act* provides the objectives for the Niagara Escarpment Plan, which are to "provide for the maintenance of the Niagara Escarpment and land in its vicinity substantially as a continuous natural environment and to ensure only such development occurs as is compatible with that natural environment" (NEC, 2015). With regards to development on the Niagara Escarpment, Section 1.8 of the Niagara Escarpment Plan states the following requirements:

- To minimize any adverse effects of recreational activities on the Escarpment environment.
- To provide areas where new recreational and associated development can be concentrated around established, identified or approved downhill ski centers.
- To provide areas where new recreational and associated development can be concentrated around established, identified or approved lakeshore cottage areas in Grey and Bruce Counties.
- To ensure that future recreational development is compatible with cultural and natural heritage values (e.g. fisheries and wildlife habitats) in the area.

2.5.1 Relevance to the Development Proposal

The Niagara Escarpment Commission designates the subject lands as an Escarpment Recreation Area on Map 6: County of Grey. According to the Niagara Escarpment Plan, designated Escarpment Recreation Areas are areas that are existing or potential recreational development associated with the Escarpment. Such areas may include both seasonal and permanent residences.

2.6 Endangered Species Act

The Provincial *Endangered Species Act* (2007) protects the endangered species that are listed on the regulations under the act. It specifically prohibits willful harm to endangered species that are listed in regulations under the Act and the willful destruction of, or interference with, their habitats. Species



LEGEND

- PROPERTY BOUNDARY
- NVCA REGULATED AREAS
- NVCA JURISDICTION LIMIT

N

1 : 2500

No.	Revision	Date	Int.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY ERRORS OR OMISSIONS TO THE CONSULTANT BEFORE COMMENCING OR PROCEEDING WITH ANY WORK.

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PROJECT

BLUE VISTA
 Town of The Blue Mountains, Ontario

TITLE

**NVCA
 Regulated Areas**

SEAL 	SEAL
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thought to be at risk are assessed by The Committee on the Status of Species at Risk in Ontario (COSSARO). COSSARO is an independent body that reviews species based on the best available science, including community knowledge, and Aboriginal Traditional Knowledge. There are several components of species at risk protection that, under the new Act are now legal regulations.

- the Species at Risk in Ontario (SARO) list,
- General regulations to provide greater flexibility, and Habitat Regulations to describe the habitat of a species.

The Natural Heritage Information Centre tracks and maintains data on Ontario's endangered species and was consulted as to the listed species on or within a one kilometre grid surrounding the subject lands.

2.6.1 Relevance to the Development Proposal

The search of the Natural Heritage Information Centre (NHIC) did not reveal the presence for any rare species on or directly adjacent to the subject lands.

In regards to Species At Risk (SAR) flora, ten (10) butternut (*Juglans cinerea*) trees were found on-site. Butternut is listed and regulated as an Endangered - END species under the *Endangered Species Act, (2007)* (Province of Ontario 2007).

SAR fauna observed or heard on-site included eastern wood-pewee (*Contopus virens*), wood thrush (*Hylocichla mustelina*), and monarch (*Danaus plexippus*), all of which are listed as "Special Concern" (SC) species in Ontario. A "Special Concern" species lives in the wild in Ontario, is not endangered or threatened but may become threatened or endangered due to a combination of biological characteristics and identified threats.

2.7 Species at Risk Act

The Federal *Species at Risk Act (2002)* is designed to prevent wildlife species from becoming extinct or extirpated; help in the recovery of extirpated, endangered or threatened species; and to ensure that species of special concern do not become endangered or threatened.

The Act maintains an on-line registry of species at risk (Schedule 1) which is the official Federal list of wildlife species at risk. Species are classified as being either extirpated, endangered, threatened or special concern. Once the species becomes listed, the measures to protect and recover a listed wildlife species are implemented.

2.7.1 Relevance to the Development Proposal

Wood thrush is listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Threatened – THR (COSEWIC 2012), but has not status under the SARA (2002).

3. Study Area Evaluation

3.1 Field and Recorded Data Collection

The technical evaluation of recorded data and field investigations was completed by Mr. David Cunningham. Mr. Cunningham is a senior scientist with over 40 years experience.

3.1.1 Vegetation Methods

3.1.1.1 Collection and Review of Background Information

Background natural environment data was solicited through various platforms from the Ministry of Natural Resources & Forestry (MNR), Grey Sauble Conservation Authority (GSCA), Nottawasaga Valley Conservation Authority (NVCA), The Town of Blue Mountains and County of Grey. Data was collected prior to and during the site reconnaissance and flora and fauna inventories of the subject property in 2017 and 2018. The Town's Official Plan was also consulted for information on land use and natural environment designations pertaining to the subject property (Town of the Blue Mountains 2016).

Grey County (2010 & 2015) and Google Earth Pro (April 18, 2011; November 11, 2014; and June 19, 2015) coloured orthophotos which provided coverage of the subject property and abutting lands were obtained and used as field base maps. The preliminary boundaries and types of vegetation communities were overlain onto the 2010 and 2015 coloured orthophotographs and subsequently refined through ground-truthing.

Types of terrestrial natural vegetation communities included: dry-fresh poplar deciduous forest (FODM3-1); dry-fresh white ash-hardwood deciduous forest (FODM4-2); dry-fresh sugar maple-white birch-poplar-white ash deciduous forest (FODM5-10); fresh-moist poplar deciduous forest (FODM8-1); dry-fresh poplar mixed forest (FODM5-1); fresh-moist white cedar-hardwood mixed forest (FODM7-2); and dry-fresh white cedar coniferous forest (FOCM2-2).

Terrestrial cultural vegetation communities included: dry-fresh hawthorn-white cedar mixed woodland (WODM3-1); native mixed regeneration thicket (THMM1-1); naturalized deciduous hedge-row (FODM11); red-osier dogwood shrub thicket (THDM2-12)/dry-fresh mixed meadow (MEMM3); dry-fresh mixed meadow (MEMM3); and annual row crop (OAGM1).

Wetland vegetation communities included: green ash mineral deciduous swamp (SWDM2-2)/poplar mineral deciduous swamp (SWDM4-5); cattail mineral shallow marsh (MASM1-1); and cattail graminoid mineral meadow marsh (MAMM1-2).

Documentation and other sources reviewed for natural environment data included but were not limited to:

- **Natural Heritage Resources of Ontario: Bibliography of Life Science Areas of Natural and Scientific Interest in Ecological Site Regions 6E and 7E, Southern Ontario** (Riley *et al.* 1997);

- **Life Science Areas of Natural and Scientific Interest in Site District 6-6 – A Review and Assessment of Significant Natural Areas in Site District 6-6** (Hanna 1984);
- **Natural Heritage Information Centre (NHIC) Internet Database/Biodiversity Explorer** (NHIC 2019);
- **Land Information Ontario** (LIO 2019);
- **County of Grey Official Plan** (County of Grey 2013);
- **County of Grey Digital Orthorectified Imagery** (County of Grey 2010 and 2015);
- **Grey County Natural Heritage System Study “Grey in Grey”** (MSH and NRSI 2017);
- **Distribution and Status of the Vascular Plants of Southwestern Ontario** (Oldham *et al.* 1993);
- **A Checklist of Vascular Plants for Bruce and Grey Counties, Ontario** (Bruce-Grey Plant Committee 1997a);
- **A Guide to the Orchids of Bruce and Grey Counties, Ontario** (Bruce-Grey Plan Committee – Owen Sound Field Naturalists 1997b); and,
- **Town of the Blue Mountains Official Plan** (Town of the Blue Mountains 2016)

In addition to the reports listed above, various databases were searched for flora and fauna records on-site or in the surrounding area. These websites and databases included:

- **Atlas of the Mammals of Ontario** (Dobbyn 1994)
- **Ontario Breeding Bird Atlas (OBBA)** (Bird Studies Canada *et al.* 2006)
- **Ontario’s Reptile and Amphibian Atlas** (Ontario Nature 2018)

Background information was also garnered to assess for potential Species At Risk (SAR) and Candidate Significant Wildlife Habitat (SWH) in and abutting the subject property, based on either species presence and/or habitat types arising from the wildlife surveys (MNR 2015).

3.1.1.2 Agency Contacts

The following resource agency staffs were contacted regarding natural environment data for the subject lands and abutting properties.

- Kathy Dodge, Habitat Biologist – Ministry of Natural Resources & Forestry (MNR) Owen Sound District Office
- Andrew Sorensen, Environmental Planning Coordinator – Grey Sauble Conservation Authority (GSCA)

3.1.1.3 Field Reconnaissance and Inventories

Site inspections and inventories of the natural terrestrial and wetland features within the subject lands were undertaken on June 14 and October 25, 2017; and April 30, May 23, June 7, June 8, June 22, July 19 and September 7, 2018. Field surveys were undertaken to ensure complete coverage of the natural and cultural features and inherent flora, including abutting lands along the subject property perimeter. During all site visits, botanical, soils, drainage and wildlife data were also noted and recorded, along with a photographic record, where applicable.

Vertebrate terrestrial species (birds, mammals, amphibians and reptiles) were documented on each

site visit based on visual contact (direct sightings) and/or on the basis of indirect evidence (e.g. vocalizations, tracks, scats, pellets, burrows, nests, feathers, browse, etc.). Survey methods used to identify, delineate and characterize the vegetation communities, floristics, wildlife and wildlife habitat, and ecological functions on and abutting the property followed standard MNR and Bird Studies Canada survey protocols.

3.1.1.4 Vegetation Resources

The boundaries of the vegetation communities were delineated through aerial photographic interpretation (2010 and 2015 orthophotos) and verified through ground-truthing. The botanical inventories included those features on the subject property and abutting the property perimeter. Field visit dates for detailed botanical surveys were conducted on June 14 and October 25, 2017; and April 30, May 23, June 7, June 8, June 22, July 19 and September 7, 2018 and supplemented with observations garnered through the wildlife inventories.

All vegetation features were characterized following the protocols and terminology of the Ecological Land Classification (ELC) system of the MNR including adaptations, entitled “**Southern Ontario Ecological Land Classification – Vegetation Type List**” (Lee 2008). This protocol is a revision and update of the “**Ecological Land Classification for Southern Ontario – First Approximation and Its Application**” (Lee *et al.* 1998). In addition to the ELC system, additional characterization and potential rarity of the on-site vegetation communities was aided through a review of the Natural Heritage Resources of Ontario: Vegetation Communities of Southern Ontario (Bakowsky 1997).

The classification of the general vegetation communities were characterized according to species composition and physiognomic characteristics. The nomenclature for the flora observed is consistent with and relied on the following authorities:

- Lycopodiaceae to Aspleniaceae Cody, W. J., and D. F. Britton. 1989. **Fern and Fern Allies of Canada.** Publication 1829/E, Agriculture Canada, Research Branch, Ottawa.
- Taxaceae to Orchidaceae – Voss, E. G. 1972. **Michigan Flora. Part 1: Gymnosperms and Monocots.** Cranbrook Institute of Science and University of Michigan Herbarium. Bulletin 55.
- Saururaceae to Cornaceae – Voss, E. G. 1985. **Michigan Flora. Part 2: Dicots.** Cranbrook Institute of Science and University of Michigan Herbarium. Bulletin 59.
- Pyrolaceae to Compositae – Voss, E. G. 1996. **Michigan Flora. Part 3: Dicots.** Cranbrook Institute of Science and University of Michigan Herbarium. Bulletin 61.
- Newmaster, S. G., A. Lehela, P. W. C. Uhlig, S. McMurray, M. J. Oldham, and Ontario Forest Research Institute. 1998. **Ontario Plant List.** FRI Paper No. 123.
- Bradley, D. J. 2013. **Southern Ontario Vascular Plant Species List.** 3rd Edition. Science & Information Branch Southern Science and Information Section. Ontario Ministry of Natural Resources, Peterborough, Ontario. SIB SSI SR-03, 78 p.

The rarity or significance for vegetation communities and vascular plants (floristics) on the subject property was determined from standard status lists, published literature and the NHIC dataquery web-site (NHIC 2019). Sources for flora included Bakowsky (1997), Environment Canada and Climate Change Canada (2018), COSEWIC (2018), Province of Ontario (2007), MNR (2019), Oldham and

Brinker (2009), Oldham *et al.* (1993), Bruce – Grey Plant Committee (1997a, 1997b) and Leslie (2018). Rare plant species (Species At Risk in Ontario – SARO) included those listed and regulated under the Federal **Species At Risk Act, 2002** (Environment and Climate Change Canada 2018) and the Provincial **Endangered Species Act, 2007** (Province of Ontario 2007) as amended from time to time. The determination for plant species rarity consisted of a straightforward comparison of the plant species recorded on-site with those listed in these source references.

3.2 Background Reports

As part of the subject land assessment, available relevant reports were reviewed for information relating to natural heritage features and functions of the subject lands. This included the Preliminary Stormwater Management Report, Functional Servicing Report and the Traffic Impact Study prepared by C.C Tatham & Associates Ltd. (February 27, 2019).

3.3 Vegetation

3.3.1 Surrounding Land Uses

The subject property fronts onto the western edge of Osler Bluff Road (County Road 21), in the Town of the Blue Mountains (See Appendix C, Photographs 1 and 2). The northern and western parts of the property lie within a watershed regulated by the Grey Sauble Conservation Authority (GSCA) and the southern part within the Nottawasaga Valley Conservation Authority (NVCA). Land use to the east consists of as-built residential lots in the Town of Collingwood. Land use to the north includes as-built residential lots (Crestview Estates) and part of the Monterra Golf Club. To the south lies the Scandinave Spa Blue Mountain, deciduous mixed forest and lands that have been cleared for future residential development. Lands to the west of the property have essentially been cleared for future residential development (See Appendix C, Photographs 3, 4, 5 and 6).

3.3.2 Regional Vegetation

Based on a forest classification system developed by Rowe (1972), the property lies within the Huron-Ontario Section of the Great Lakes-St. Lawrence Forest Region Based. This forest region extends from the southern portion of Georgian Bay to Lake Ontario. Sugar maple (*Acer saccharum*) and beech (*Fagus grandifolia*) were common over the whole area. Typical woody associates include white ash (*Fraxinus americana*), red ash (*Fraxinus pennsylvanica*), basswood (*Tilia americana*), yellow birch (*Betula alleghaniensis*), red maple (*Acer rubrum*), red oak (*Quercus rubra*), white oak (*Quercus alba*) and bur oak (*Quercus macrocarpa*). Other trees include eastern white cedar (*Tsuga occidentalis*), white birch (*Betula papyrifera*), eastern hemlock (*Tsuga canadensis*), eastern white pine (*Pinus strobus*), balsam fir (*Abies balsamea*), largetooth aspen (*Populus grandidentata*), trembling aspen (*Populus tremuloides*), hop hornbeam (*Ostrya virginiana*), black cherry (*Prunus serotina*) and bitternut hickory (*Carya cordiformis*). Trees in river-bottoms and swamps include eastern white cedar, silver maple (*Acer saccharinum*), white elm (*Ulmus americana*), black ash (*Fraxinus nigra*) and green ash (*Fraxinus pennsylvanica* var. *subintegerrima*).

3.3.3 Site Vegetation

3.3.3.1 Terrestrial Features

Terrestrial natural and cultural features dominate the local landscape on the property (See Figure 3). The eastern portion is predominantly covered with agricultural cropland that was ploughed and left fallow in 2018. The western portion consists of a mosaic of upland early successional deciduous, mixed and coniferous woodlands, along with pockets of upland shrub thicket in combination with mixed meadow. Bisecting the property in a northwest to southeast direction is an intermittent tributary which eventually drains through a culvert underneath Osler Bluff Road. The northern portion of the tributary was braided, with no flows, only mucky saturated soils within a mixed stand of poplars, eastern white cedar and other hardwood. Within the floodplain and valleylands of the intermittent tributary is a green/poplar treed swamp. Feeding into the valley are two pockets of wetland that lie within distinct seepage zones and are dominated by cattails, ferns, sedges and aquatic forbs. The seepage drainage exhibits a more or less permanent flow, and contributes trickle flows further downgradient to the intermittent tributary.

Terrestrial and cultural features include: Dry-Fresh Poplar Deciduous Forest (FODM3-1); Dry-Fresh White Ash-Hardwood Deciduous Forest (FODM4-2); Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest (FODM5-10); Fresh-Moist Poplar Deciduous Forest (FODM8-1); Dry-Fresh Poplar Mixed Forest (FOMM5-1); White Cedar-Hardwood Mixed Forest (FOMM7-2); Dry-Fresh White Cedar Coniferous Forest (FOCM2-2); Dry-Fresh Hawthorn-White Cedar (WOMM3-1); Native Mixed Regeneration Thicket (THMM1-1); Naturalized Deciduous Hedge-row (FODM11); Red-osier Dogwood Shrub Thicket (THDM2-12)/Dry-Fresh Mixed Meadow (MEMM3); Annual Row Crop (OAGM1); and Dry-Fresh Mixed Meadow (MEMM3).

Field visits were undertaken on-site during the fall season of 2017 on June 14 and October 25. Extensive and detailed botanical inventories were conducted on April 30, May 23, June 7, June 8, June 22, July 19 and September 7, 2018 to ensure all representative vegetation communities and floristics were covered. The botanical data was supplemented from incidental observations noted during the wildlife surveys.

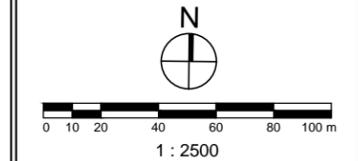
The following sub-sections in conjunction with Table 1 (ELCs), Figure 3 and the representative photographs in Appendix C provide qualitative descriptions and a visual perspective of the terrestrial, cultural, wetland and aquatic features that lie on and which abut (land uses) the property.

KEY	DESCRIPTION
1	Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest (FODM5-10)
2	White Cedar-Hardwood Mixed Forest (FOMM7-2)
3	Green Ash Mineral Deciduous Swamp (SWDM2-2) and Poplar Mineral Deciduous Swamp (SWDM4-5)
4	Cattail Mineral Shallow Marsh (MASM1-1)
5	Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)
6	Dry-Fresh Hawthorn-White Cedar Mixed Woodland (WOMM3-1)
7	Native Mixed Regeneration Thicket (THMM1-1)
8	Red-Osier Dogwood Shrub Thicket (THDM2-12) and Dry-Fresh Mixed Meadow (MEMM3)
9	Annual Row Crop (OAGM1)
10	Naturalized Deciduous Hedge-Row (FODM11)
11	Dry-Fresh Poplar Deciduous Forest (FODM3-1)
12	Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)
13	Dry-Fresh Poplar Mixed Forest (FOMM5-1)
14	Fresh-Moist Poplar Deciduous Forest (FODM8-1)
15	Dry-Fresh White Ash - Hardwood Deciduous Forest (FODM4-2)
16	Dry-Fresh Mixed Meadow (MEMM3)



LEGEND

- PROPERTY BOUNDARY
- EXISTING WATERCOURSE
- EXISTING INTERMITTENT WATERCOURSE
- ECOLOGICAL LAND CLASSIFICATION
- BUTTERNUT TREE LOCATION
- 8 ELC CODE (SEE TABLE FOR DESCRIPTION)



No.	Revision	Date	Int.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY ERRORS OR OMISSIONS TO THE CONSULTANT BEFORE COMMENCING OR PROCEEDING WITH ANY WORK.

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BLUE VISTA
 Town of The Blue Mountains, Ontario

TITLE
 Ecological Land Classification and Butternut Tree Locations



Scale: 1:2500	Drawing No.:
Date: 2019 / 04 / 02	Fig.3
CAD File: HDG_BLUEVISTA-ELC-2019	
Drawn by: DC	
Checked by: MH	

Table 1. List of Vegetation Communities (ELC Units) on the Blue Vista Property, Town of the Blue Mountains

ELC Code	Vegetation Type	Summary Description
FODM3-1	Dry-Fresh Poplar Deciduous Forest	<ul style="list-style-type: none"> - a small copse dominated by trembling aspen, along with white ash and scattered eastern white cedar - shrub and vine species include riverbank grape, common buckthorn, common apple, poison ivy, choke cherry and Virginia creeper - groundcover comprised of weeds, common grasses and forbs typically found in adjoining thickets THMM1-1 and THDM2-12
FODM4-2	Dry-Fresh White Ash-Hardwood Deciduous Forest	<ul style="list-style-type: none"> - situated along the top of slope on east side of intermittent tributary is a narrow treed band dominated by white ash with associates of trembling aspen, sugar maple and Manitoba maple - shrub and vine stratum species include common buckthorn, choke cherry, common apple, tartarian honeysuckle, riverbank grape, Virginia creeper and hawthorn - typical groundflora includes field horsetail, awnless brome grass, common burdock, common buttercup, Canada anemone, daisy fleabane, tall goldenrod, Canada goldenrod, eastern bracken fern, enchanters nightshade, and wild red raspberry
FODM5-10	Dry-Fresh Sugar Maple-White Birch- Poplar Deciduous Forest	<ul style="list-style-type: none"> - a block of hardwoods and softwoods along the top of bank and slopes of the intermittent tributary in the southeast corner - dominated by sugar maple, white ash, white birch and basswood, with other woody associates such as Manitoba maple, common apple, eastern white cedar, trembling aspen, white elm, hop hornbeam, black walnut, beech and butternut - shrub and vine stratum contain common buckthorn, staghorn sumac, alternate-leaved dogwood, choke cherry, northern bush honeysuckle, riverbank grape, Virginia creeper, black raspberry, and pasture gooseberry - the sparse to weedy groundcover contains common lettuce, red baneberry, yellow avens, field horsetail, rose-twisted stalk, wild lily-of-the-valley, downy yellow violet, common dandelion, false Solomon's-seal, Canada anemone, coltsfoot and herb-robert - at the eastern end is an inclusion of MAMM1-2 (cattail graminoid meadow marsh) bordering the intermittent tributary, with typical species such as spotted jewelweed, narrow-leaved cattail, meadow horsetail, fringed loosestrife, Virgins-bower, hairy willow-herb, boneset, spotted Joe pye-weed, poison hemlock, willows, dogwoods, sensitive fern, creeping buttercup, deadly nightshade, false wood-nettle, and meadow sedge

FODM8-1	Fresh-Moist Poplar Deciduous Forest	<ul style="list-style-type: none"> - situated at the north end of the intermittent tributary valley is a block of poplar mixed woodland, dominated by trembling aspen, balsam poplar, Carolina poplar, white birch, white elm, green ash, basswood, silky dogwood, choke cherry and red-osier dogwood - typical groundflora in the mucky to saturated mineral soils includes dewberry, Virginia creeper, meadow horsetail, herb-robert, graceful sedge, sensitive fern, deadly nightshade, fringed loosestrife, yellow avens, woodland strawberry, poison ivy, field horsetail, false Solomon's-seal, wood-nettle, bottlebrush grass, enchanters nightshade, and helleborine
FOMM5-1	Dry-Fresh Poplar Mixed Forest	<ul style="list-style-type: none"> - contiguous and due west of FODM8-1 is a stand dominated by trembling aspen, along with balsam poplar, eastern white cedar, common buckthorn, white ash, choke cherry, silky dogwood, poison ivy, riverbank grape, Virginia creeper, hawthorn, pasture gooseberry, white birch, white elm, and strawberry-bush and scattered hop hornbeam - the sparse to clumped groundcover consists of woodland strawberry, poison ivy, yellow avens, creeping buttercup, spinulose woodfern, enchanters nightshade, herb-robert, meadow horsetail, riverbank grape, Virginia creeper, helleborine, bottlebrush grass, false wood-nettle, sweet cicely, wild basil, barren strawberry and common dandelion
FOMM7-2	White Cedar-Hardwood Mixed Forest	<ul style="list-style-type: none"> - two relatively large blocks of this woodland feature lie along the western side of the tributary, contiguous with other woodland features that comprise the intermittent tributary valley - eastern white cedar and trembling aspen are dominant, with the northern block dominated by dense pole-sized eastern white cedar, and the southern block by a mixture of eastern white cedar, trembling aspen and white birch - other woody associates include hop hornbeam, white birch, white ash, choke cherry, sugar maple, black cherry, white poplar, common apple, hawthorn, common buckthorn, riverbank grape, Virginia creeper and poison ivy - the sparse to barren groundcover contains enchanters nightshade, graceful sedge, spinulose wood-fern, field horsetail, white ash seedlings, yellow avens, downy yellow violet, red baneberry, white baneberry, herb-robert, eastern bracken fern, sensitive fern, zig-zag goldenrod, black raspberry, common dandelion, wild basil, fringed loosestrife, creeping buttercup, and woodland strawberry

FOCM2-2	Dry-Fresh White Cedar Coniferous Forest	<ul style="list-style-type: none"> - a relatively large block on the tableland to the west of FOMM7-2 is dominated by pole-sized to moderately mature eastern white cedar - other woody associates include common apple, hawthorn, common buckthorn and choke cherry - the groundcover is barren to sparse, with a dense layer of duff and lacks any definitive plant coverage, only scattered weeds and the occasional fern and forb
WOMM3-1	Dry-Fresh Hawthorn-White Cedar Mixed Woodland	<ul style="list-style-type: none"> - contiguous with FOCM2-2 and FODM3-1 is a cultural woodland feature dominated by hawthorn and eastern white cedar - other woody associates in the dense understory and shrub/vine stratum include silky dogwood, red-osier dogwood, white ash, white elm, common buckthorn, common apple, riverbank grape, choke cherry, tartarian honeysuckle, wild red raspberry, and Virginia creeper - the groundflora is comprised of similar species to those found in the abutting thickets THMM1-1 and THDM2-12
THMM1-1	Native Mixed Regeneration Thicket	<ul style="list-style-type: none"> - white ash, common apple, silky dogwood, red-osier dogwood, and common buckthorn dominate this regenerating thicket - other woody species noted include basswood, riverbank grape, Virginia creeper, white elm, trembling aspen, choke cherry, scattered eastern white cedar and buffaloberry - groundflora includes Dewey's sedge, common mullein, brown knapweed, heal-all, wild carrot, horseweed, common strawberry, common dandelion, orchard grass, cow vetch, common milkweed, red clover, white clover, common buttercup, awnless brome grass, quack grass, meadow fescue, common plantain, tall goldenrod, Canada goldenrod, Canada thistle, goat's-beard, poison ivy, and eastern bracken fern
FODM11	Naturalized Deciduous Hedge- row	<ul style="list-style-type: none"> - at the interface with the abutting golf course along the north property perimeter on the east side of the valley is a narrow band (hedge-row) of hardwoods, softwoods and shrubs - dominant trees include sugar maple, trembling aspen, basswood, white ash, balsam poplar, white poplar and European birch - typical shrub species include hawthorn, choke cherry, tartarian honeysuckle, common apple, common buckthorn and wild red raspberry - the groundcover is comprised of weeds, common grasses and forbs found in MEMM3 and THMM1-1 and THDM2-12

THDM2-12	Red-osier Dogwood Shrub Thicket	<ul style="list-style-type: none"> - this upland feature is a combination of dogwood thicket and mixed meadow, situated on tableland to the east of the valley, and bordered to the east, north and west by forest and woodland features - a similar block of this cultural feature lies along the western property perimeter
MEMM3	Dry-Fresh Mixed Meadow	<ul style="list-style-type: none"> - dominant woody species are red-osier dogwood, silky dogwood, white ash, common apple, crab apple, common buckthorn, common elderberry, choke cherry, hawthorn, multiflora rose, black cherry, wild red raspberry, black raspberry, tartarian honeysuckle, buffaloberry, riverbank grape and Virginia creeper - the groundflora contains common buttercup, cow vetch, Canada goldenrod, wild carrot, red clover, white clover, white sweet-clover, Kentucky bluegrass, annual blue grass, New England aster, common plantain, common dandelion, graceful sedge, meadow sedge, awnless brome grass, reed canary grass, timothy, orchard grass, awnless brome grass, heal-all, sparrow vetch, chicory, black knapweed, elecampane, English plantain, common yarrow, common milkweed, tall goldenrod, common mullein, goat's-beard, and low hop clover
OAGM1	Annual Row Crop	<ul style="list-style-type: none"> - a relatively large block of agricultural cropland lies in the eastern half of the property - this cultural feature are ploughed and not planted in 2018, and there are scattered weeds throughout along the tops of the ploughed furrows
MEMM3	Dry-Fresh Mixed Meadow	<ul style="list-style-type: none"> - bordering the outer edge of the eastern forested edge of the valley is a narrow band dominated by weed, grasses and herbaceous forbs, along with scattered shrubs and white ash saplings, hawthorn, multiflora rose and scattered Scotch pine - typical groundflora includes orchard grass, Kentucky bluegrass, rough-fruited cinquefoil, low hop clover, poison ivy, annual blue grass, awnless brome grass, wild carrot, cow vetch, common strawberry, common dandelion, thimbleweed, field horsetail, red clover, white clover, agrimony, alfalfa, meadow fescue, common yarrow, night-flowering catchfly, bouncing bet, wild red raspberry, tall goldenrod, New England aster, Canada goldenrod, wild basil, reed canary grass, English plantain, and curly dock

<p>SWD2-2</p> <p>SWDM4-5</p>	<p>Green Ash Mineral Deciduous Swamp</p> <p>Poplar Mineral Deciduous Swamp</p>	<ul style="list-style-type: none"> - border the edges of the intermittent tributary and along the valleyland floor is treed swamp dominated by green ash in the northern half, with trembling aspen/balsam poplar intermixed with green ash in the southern half - other woody associates include white elm, red-berried elder, Virginia creeper, riverbank grape, eastern white cedar, willows, and dogwoods - the wet to saturated mucky mineral soils provide habitat for spotted jewelweed, false wood-nettle, sensitive fern, boneset, graceful sedge, American brooklime, meadow horsetail, European water horehound, cut-leaved water horehound, deadly nightshade, fringed loosestrife, enchanters nightshade, reed canary grass, fowl manna grass, creeping bent grass, marsh horsetail, ostrich fern, spotted Joe pye-weed, boneset, and blue vervain
<p>MASM1-1</p>	<p>Cattail Mineral Shallow Marsh</p>	<ul style="list-style-type: none"> - separating the two block of FOMM7-2 is a narrow band of cattail mineral marsh along a well-defined seep that drains down slope to the intermittent tributary - this small pocket of other wetland is dominated by narrow-leaved cattail, broad-leaved cattail, creeping buttercup, spotted jewelweed, meadow horsetail, peach-leaved willow, Bebb's willow, pussy willow, red-osier dogwood, silky dogwood, purple-stemmed aster, spikerush, elecampane, fragrant bedstraw, silverweed, fringed loosestrife, graceful sedge, curly wood sedge, sensitive fern, and water horehound
<p>MAMM1-2</p>	<p>Cattail Graminoid Mineral Meadow Marsh</p>	<ul style="list-style-type: none"> - at the base of a steep eastern white cedar treed slope and surrounded by FOMM7-2 to the north and THMM1-1 to the south is a trough of other wetland characterized as cattail graminoid meadow marsh with some treed swamp, which exhibits continual seepage flows, which flow eastward and connect to the intermitted tributary in the valley - woody tree, shrub and vine cover is comprised of black ash, green ash, white elm, eastern white cedar, Virginia creeper, riverbank grape, pussy willow, dogwoods, balsam poplar, and white birch - dominant groundflora includes sensitive fern, ostrich fern, marsh horsetail, spotted jewelweed, softstem bulrush, common rush, bittercress, purple-stemmed aster, creeping buttercup, water dock, forget-me-not, boneset, spotted Joe pye-weed, American brooklime, reed canary grass, creeping bent grass, fowl manna grass, red currant, Canada bluejoint grass, fragrant bedstraw, awl-fruited sedge, meadow sedge, foxtail sedge, Bebb's sedge, deadly nightshade, wild mint, water horehound, and fowl blue grass

Dry-Fresh Poplar Deciduous Forest (FODM3-1)

This upland woodland feature consists of a small copse dominated by trembling aspen, along with white ash and scattered eastern white cedar (See Appendix C, Photographs 7 and 8). The shrub and vine stratum includes riverbank grape (*Vitis riparia*), common buckthorn (*Rhamnus cathartica*), choke cherry (*Prunus virginiana*), poison ivy (*Rhus radicans*), Virginia creeper (*Parthenocissus inserta*), common apple (*Malus pumila*), silky dogwood (*Cornus amomum*), and red-osier dogwood (*Cornus stolonifera*). The ground stratum contains typical weed and grasses, such as horseweed (*Conyza canadensis*), common strawberry (*Fragaria virginiana*), common milkweed (*Asclepias syriaca*), common buttercup (*Ranunculus repens*), red clover (*Trifolium pretense*), reed canary grass (*Phalaris arundinacea*), agrimony (*Agrimony gryposepala*), tall goldenrod (*Solidago altissima*), and Canada goldenrod (*Solidago canadensis*).

Dry-Fresh White Ash-Hardwood Deciduous Forest (FODM4-2)

The woodland feature is situated along the top of a slope on the east side of the intermittent tributary and consists of a narrow band dominated by white ash, along with associates of trembling aspen, sugar maple and Manitoba maple (See Appendix C, Photographs 9 and 10). The dense shrub and vine stratum includes common buckthorn, choke cherry, common apple, tatarian honeysuckle (*Lonicera tatarica*), riverbank grape (*Vitis riparia*), Virginia creeper, and hawthorn (*Crataegus spp.*).

Typical groundflora includes field horsetail (*Equisetum arvense*), awnless brome grass (*Bromus inermis*), common burdock (*Arctium minus*), common buttercup, Canada anemone (*Anemone canadensis*), daisy fleabane (*Erigeron annuus*), tall goldenrod, Canada goldenrod, eastern bracken fern (*Pteridium aquilinum*), enchanters nightshade (*Circaea lutetiana*), wild red raspberry (*Rubus idaeus*), common strawberry, and herb-robert (*Geranium robertianum*).

Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest (FODM5-10)

This woodland feature consists of a block of deciduous hardwood and softwoods situated along the top-of-bank and valleywall slopes of the intermittent tributary, in the southeast corner of the property (See Appendix C, Photographs 11, 12, 13 and 14). Dominated by semi-mature to mature sugar maple, white ash, white birch, and basswood (*Tilia americana*). Other woody associates in the overstory and understory include Manitoba maple, common apple, basswood, eastern white cedar, trembling aspen, white elm, hop hornbeam (*Ostrya virginiana*), beech, black walnut (*Juglans nigra*) and scattered butternut (*Juglans cinerea*).

Shrub and vine stratum species include common buckthorn, staghorn sumac (*Rhus typhina*), alternate-leaved dogwood (*Cornus alternifolia*), choke cherry, common apple, northern bush honeysuckle (*Diervilla lonicera*), riverbank grape, Virginia creeper, black raspberry (*Rubus alleghaniensis*) and pasture gooseberry (*Ribes cynosbati*).

The groundcover consists of typical woodland wildflowers, ferns, sedges and grasses. There is a wetland feature (MAMM1-2) inclusion that straddles the edge of the intermittent tributary, but was not of sufficient size to delineate as a separate feature. Woodland groundcover species include common lettuce (*Prenanthes alba*), red baneberry (*Actaea rubra*), yellow avens (*Geum aleppicum*), field horsetail, rose-twisted stalk (*Streptopus roseus*), wild lily-of-the-valley (*Maianthemum canadense*), downy yellow violet (*Viola pubescens*), common dandelion (*Taraxacum officinale*), false Solomon's-seal (*Maianthemum racemosum*), Canada anemone, coltsfoot (*Tussilago farfara*), herb-robert, graceful sedge (*Carex gracillima*), common burdock, creeping buttercup (*Ranunculus repens*),

Christmas fern (*Polystichum acrosticoides*), enchanters nightshade, woodland sedge (*Carex blanda*), and eastern bracken fern.

The small inclusion of other wetland along the littoral edges of the intermittent tributary is dominated by typical aquatic forbs, sedge and ferns, on the wet to saturated mineral soils. Typical species include spotted jewelweed (*Impatiens capensis*), narrow-leaved cattail (*Typha angustifolia*), broad-leaved cattail (*Typha latifolia*), meadow horsetail, fringed loosestrife, Virgins-bower (*Clematis virginiana*), ostrich fern (*Matteuccia struthiopteris*), hairy willow-herb (*Epilobium hirsutum*), soft-stem bulrush (*Scirpus validus*), fragrant bedstraw (*Galium triflorum*), boneset (*Eupatorium perfoliatum*), spotted Joe pye-weed (*Eutrochium maculatum*), poison hemlock (*Conium maculatum*), willows, dogwoods, maple-leaved viburnum (*Viburnum acerifolium*), sensitive fern, creeping buttercup, deadly nightshade, false wood-nettle (*Boehmeria cylindrica*), and meadow sedge (*Carex granularis*). There are seeps and mucky organic soils along portions of the valleywalls.

Fresh-Moist Poplar Deciduous Forest (FODM8-1)

Situated at the north end of the intermittent tributary valley is a block of poplar mixed woodland, dominated by trembling aspen, balsam poplar, Carolina poplar (*Populus deltoides*), white birch, white elm, green ash, basswood, silky dogwood, choke cherry and red-osier dogwood (See Appendix C, Photographs 15 and 16).

Typical groundflora on the mucky to saturated mineral soils include dewberry (*Rubus flagellaris*), Virginia creeper, meadow horsetail (*Equisetum pretense*), herb-robert, graceful sedge, sensitive fern (*Onoclea sensibilis*), deadly nightshade (*Solanum dulcamara*), fringed loosestrife (*Lysimachia ciliata*), yellow avens, woodland strawberry (*Fragaria vesca*), poison ivy, field horsetail, false Solomon's-seal, wood-nettle (*Laportea canadensis*), bottlebrush grass (*Elymus hystrix*), enchanters nightshade, helleborine (*Epipactis helleborine*), and forget-me-not (*Myosotis laxa*).

Dry-Fresh Poplar Mixed Forest (FOMM5-1)

Contiguous to and due west of FODM8-1 is a stand dominated by trembling aspen, along with balsam poplar, eastern white cedar, common buckthorn, white ash, choke cherry, silky dogwood, poison ivy, riverbank grape, Virginia creeper, hawthorn, pasture gooseberry, white birch, white elm, scattered hop hornbeam and strawberry-bush (*Euonymus americanus*) (See Appendix C, Photographs 17 and 18).

The sparse to clumped groundcover consists of woodland strawberry, poison ivy, yellow avens, creeping buttercup, spinulose wood-fern (*Dryopteris carthusiana*), enchanters nightshade, herb-robert, meadow horsetail, riverbank grape, creeping buttercup, sensitive fern, field horsetail, Virginia creeper, helleborine, bottlebrush grass, false wood-nettle, wood-nettle, sweet cicely (*Myrrhis odorata*), spotted Joe pye-weed, wild basil (*Chlinopidium vulgare*), barren strawberry (*Waldsteinia fragarioides*), and common dandelion.

White Cedar-Hardwood Mixed Forest (FOMM7-2)

There are two relatively large blocks of this woodland feature which lie along the western side of the intermittent tributary and are contiguous with other woodland features that comprise the intermittent tributary valley (See Appendix C, Photographs 19, 20, 21 and 22). Dominant trees in the overstory and understory are eastern white cedar and trembling aspen, with the northern block dominated by dense pole-sized eastern white cedar, and the southern block by a mixture of eastern white cedar, trembling aspen and white birch. Other woody associates include hop hornbeam, white birch, white

ash, choke cherry, sugar maple, black cherry (*Prunus serotina*), white poplar (*Populus alba*), common apple, hawthorn, common buckthorn, riverbank grape, Virginia creeper and poison ivy.

The sparse to barren groundcover contains enchanters nightshade, graceful sedge, spinulose wood-fern, field horsetail, white ash seedlings, yellow avens, downy yellow violet, red baneberry, white baneberry (*Actaea pachypoda*), herb-robert, eastern bracken fern, sensitive fern, zig-zag goldenrod (*Solidago flexicaulis*), black raspberry, common dandelion, wild basil, fringed loosestrife, creeping buttercup and woodland strawberry.

Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)

This woodland feature consists of a relatively large block on the tableland to the west of FOMM7-2 and is dominated by pole-sized to moderately mature eastern white cedar. (See Appendix C, Photographs 23 and 24). Other woody associates include common apple, hawthorn, common buckthorn, and choke cherry.

The groundcover is barren to sparse, with a dense layer of duff and lacks any definitive plant coverage, only scattered weeds and the occasional fern and forb.

Dry-Fresh Hawthorn-White Cedar Mixed Woodland (WOMM3-1)

Contiguous with FOCM2-2 and FODM3-1 is a cultural woodland feature dominated by hawthorn and eastern white cedar (See Appendix C, Photographs 25 and 26). Typical woody associates in the dense understory and shrub/vine stratum include silky dogwood, red-osier dogwood, white ash, white elm, common buckthorn, common apple, riverbank grape, choke cherry, tartarian honeysuckle, wild red raspberry, and Virginia creeper.

The groundflora is comprised of similar species to those found in the abutting upland thickets THMM1-1 and THDM2-12.

Native Mixed Regeneration Thicket (THMM1-1)

White ash, common apple, silky dogwood, red-osier dogwood, and common buckthorn dominate this regenerating thicket. Associated woody species include basswood, riverbank grape, Virginia creeper, white elm, trembling aspen, choke cherry, buffaloberry (*Shepherdia canadensis*), and scattered eastern white cedar (See Appendix C, Photographs 27 and 28).

The groundflora contains a high percentage of weed, herbaceous forbs and grasses, typical of a mixed meadow feature. Commonly observed species include Dewey's sedge (*Carex deweyana*), common mullein (*Verbascum thapsus*), brown knapweed (*Centaurea jacea*), heal-all (*Prunella vulgaris*), wild carrot (*Daucus carota*), horseweed, common strawberry, common dandelion, orchard grass (*Dactylis glomerata*), cow vetch (*Vicia cracca*), common milkweed, red clover, white clover (*Ranunculus repens*), common buttercup, awnless brome grass, quack grass (*Elymus repens*), meadow fescue (*Festuca pratensis*), common plantain (*Plantago major*), tall goldenrod, Canada goldenrod, Canada thistle (*Cirsium arvense*), goat's-beard (*Tragopogon dubius*), poison ivy, and eastern bracken fern.

Naturalized Deciduous Hedge-row (FODM11)

At the interface with the abutting golf course along the northern property perimeter on the east side of the intermittent tributary is a narrow band (hedge-row) of hardwoods, softwoods and shrubs (See

Appendix C, Photographs 29 and 30). Dominant trees include sugar maple trembling aspen, basswood, white ash, balsam poplar, white poplar and European birch (*Betula pendula*). Typical shrub species include hawthorn, choke cherry, tartarian honeysuckle, common apple, common buckthorn and wild red raspberry.

The groundcover is dominated by weeds, common grasses, and forbs found in MEMM3, THMM1-1 and THDM1-2.

Red-osier Dogwood Shrub Thicket (THDM2-12)/Dry-Fresh Mixed Meadow (MEMM3)

The upland feature is a combination of dogwood thicket and mixed meadow, situated on tableland to the east of the valley, and bordered to the east, north and west by forest and woodland features (See Appendix C, Photographs 31, 32, and 33). A similar block of this cultural feature lies along the western property perimeter. Dominant woody species are red-osier dogwood, silky dogwood, white ash, common apple, crab apple (*Malus sylvestris*), common buckthorn, common elderberry (*Sambucus canadensis*), choke cherry, hawthorn, multiflora rose (*Rosa multiflora*), black cherry, wild red raspberry, black raspberry, tartarian honeysuckle, buffaloberry, riverbank grape and Virginia creeper.

The groundflora is dominated by weeds, grasses and herbaceous forbs, typical of a dry-fresh upland mixed meadow. Frequently observed species include common buttercup, cow vetch, Canada goldenrod, wild carrot, Kentucky bluegrass (*Poa pratensis*), New England aster (*Symphyotrichum novae-angliae*), common plantain, St. John's-wort (*Hypericum perforatum*), tall goldenrod, goat's-beard, meadow fescue, agrimony, timothy (*Phleum pratense*), wild basil, orchard grass, heart-leaved aster (*Symphyotrichum cordifolius*), common yarrow (*Achillea millefolium*), daisy fleabane, rough-fruited cinquefoil (*Potentilla recta*), and reed canary grass.

Annual Row Crop (OAGM1)

A relatively large block of agricultural cropland lies in the eastern half of the property (See Appendix C, Photographs 34 and 35). This cultural feature was ploughed and left fallow in 2018. Over the growing season, weeds and grasses arose on the exposed sandy-loam soils. These included false buckwheat (*Fallopia scandens*), foxtail (*Setaria viridis*), viper's bugloss (*Echium vulgare*), bladder campion (*Silene cucubalus*), common yarrow, wild carrot, orchard grass, common milkweed, St. John's-wort, awnless brome grass, common mullein, barnyard grass (*Echinochloa crus-galli*), wormseed mustard (*Erysimum cheiranthoides*), clammy ground-cherry (*Physalis heterophylla*), common dandelion, sparrow vetch (*Vicia tetrasperma*), tall goldenrod, elecampane (*Inula helenium*) and reed canary grass.

Dry-Fresh Mixed Meadow (MEMM3)

Bordering the outer edge of the eastern forested edge of the valley is a narrow band dominated by weeds, grasses and herbaceous forbs, along with scattered shrubs and white ash saplings, hawthorn, multiflora rose and scattered Scotch pine (*Pinus sylvestris*) (See Appendix C, Photographs 36 and 37).

Typical groundflora includes orchard grass, Kentucky bluegrass, rough-fruited cinquefoil, poison ivy, annual blue grass (*Poa annua*), awnless brome grass, wild carrot, cow vetch, common strawberry, common dandelion, thimbleweed (*Anemone virginiana*), field horsetail, red clover, white clover, agrimony, alfalfa (*Medicago sativa*), meadow fescue, common yarrow, night-flowering catchfly (*Silene noctiflora*), bouncing-bet (*Saponaria officinalis*), wild red raspberry, tall goldenrod, New England aster,

Canada goldenrod, wild basil, reed canary grass, English plantain (*Plantago lanceolata*), and curly dock (*Rumex crispus*).

3.3.3.2 Wetland Features

Bisecting the property in a northwest to southeast direction is an intermittent tributary which eventually drains through a culvert underneath Osler Bluff Road. The northern portion of the tributary was braided, with no flows, only mucky saturated soils within a mixed stand of poplars, eastern white cedar and other hardwood. Within the floodplain and valleylands of the intermittent tributary is a green/poplar treed swamp. Feeding into the valley are two pockets of wetland that lie within distinct seepage zones and are dominated by cattails, ferns, sedges and aquatic forbs. The seepage drainage exits a more or less permanent flow, and contributes trickle flows further downgradient to the intermittent tributary.

Wetland features include: Green Ash Mineral Deciduous Swamp (SWD2-2)/Poplar Mineral Deciduous Swamp (SWDM4-5); Cattail Mineral Shallow Marsh (MASM1-1); and Cattail Graminoid Mineral Meadow Marsh (MAMM1-2).

Green Ash Mineral Deciduous Swamp (SWD2-2)/Poplar Mineral Deciduous Swamp (SWD4-5)

Bordering the edges of the intermittent tributary and along the valleyland floor is treed swamp dominated by green ash in the northern half, with trembling aspen/balsam poplar intermixed with green ash in the southern half (See Appendix C, Photographs 38, 39, 40 and 41). Other woody associates include white elm, red-berried elder (*Sambucus pubens*), Virginia creeper, riverbank grape, eastern white cedar, willows and dogwoods.

The wet to saturated mucky soils provide habitat for spotted jewelweed, wood-nettle, sensitive fern, boneset, graceful sedge, American brooklime (*Veronica americana*), meadow horsetail, European water horehound (*Lycopus europaeus*), cut-leaved water horehound (*Lycopus americanus*), deadly nightshade, fringed loosestrife, enchanters nightshade, reed canary grass, graceful sedge, deadly nightshade, reed canary grass, fowl manna grass (*Glyceria striata*), dewberry, creeping bent grass (*Agrostis stolonifera*), marsh horsetail (*Equisetum palustre*), ostrich fern, spotted Joe pye-weed, boneset and blue vervain (*Verbena hastata*).

Cattail Mineral Shallow Marsh (MASM1-1)

Separating the two blocks of FOMM7-2 is a narrow band of cattail mineral marsh along a well-defined seep that drains down slope to the intermittent tributary (See Appendix C, Photographs 42, 43 and 44). This small pocket of other wetland is dominated by narrow-leaved cattail, broad-leaved cattail, creeping buttercup, spotted jewelweed, elecampane, fragrant bedstraw, grass-leaved goldenrod (*Euthamia graminifolia*), meadow horsetail, peach-leaved willow (*Salix petiolaris*), Bebb's willow (*Salix bebbiana*), pussy willow (*Salix discolor*), red-osier dogwood, silky dogwood, purple-stemmed aster (*Symphotrichum puniceum*), spikerush (*Eleocharis spp.*), elecampane, fragrant bedstraw, silverweed (*Potentilla anserina*), fringed loosestrife, graceful sedge, curly wood sedge (*Carex rosea*), sensitive fern and water horehound.

Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)

At the base of a steep eastern white cedar treed slope and surrounded by FOMM7-2 to the north and THMM1-1- to the south is a trough of other wetland characterized as cattail graminoid meadow marsh

and some treed swamp, which exhibits continual seepage flows, which flow eastward and connect to the intermittent tributary in the valley (See Appendix C, Photographs 45 and 46).

Dominant groundflora includes sensitive fern, ostrich fern, marsh horsetail, spotted jewelweed, softstem bulrush (*Scirpus validus*), common rush (*Juncus effusus*), bittercress (*Barbarea vulgaris*), purple-stemmed aster, creeping buttercup, water dock (*Rumex orbiculatus*), forget-me-not, boneset, spotted Joe pye-weed, American brooklime, reed canary grass, creeping bent grass, fowl manna grass, red currant (*Ribes rubrum*), Canada bluejoint grass (*Calamagrostis canadensis*), fragrant bedstraw, awl-fruited sedge (*Carex stipata*), meadow sedge, foxtail sedge (*Carex vulpinoidea*), Bebb's sedge (*Carex bebbii*), deadly nightshade, wild mint (*Metha arvensis*), water horehound, and fowl blue grass (*Poa palustris*).

3.3.3.3 Floristics

In terms of floristics, Appendix D contains a list of plant species found on-site during the 2017 botanical surveys.

3.3.3.4 Fish and Fish Habitat

The aquatic environs on the property consist of an intermittent tributary that drains across the property in a northwest to southeast direction. For the most part this feature lies within a distinct valley that is forested on both sides with a mosaic of deciduous, mixed and coniferous woodland. The downgradient portion of the intermittent tributary is fed by a seepage zone, which contributes more or less permanent flow. Primarily due to the lack of permanent water, no fish were noted in the intermittent tributary, although portions of the intermittent tributary have a defined bank, with riparian vegetation. However, the majority of the intermittent tributary consists of braided mucky saturated soils, with small shallow pockets of ponded water, trickle flow to no flows (See Appendix C, Photographs 47 and 48).

3.4 Wildlife and Wildlife Habitat

3.4.1 Wildlife and Wildlife Habitat Methods

The Blue Vista property was inventoried to ascertain and document the inherent wildlife species and wildlife usage contained therein on various dates in 2017 (June 14 and October 25) and in 2018 (April 30, May 23, June 7, June 8, June 22, June 28, and June 29). The inventories included two dawn breeding bird surveys (at 8 point count stations) on June 8 and June 22, 2018 following the Ontario Breeding Bird Atlas (OBBA) inventory protocols (Bird Studies Canada *et al.* 2006). Nocturnal wildlife surveys were also undertaken on June 29, 2018 and July 29, 2018 during the full moon phases to determine the presence, if any, of eastern whip-poor-will (*Caprimulgus vociferus*) – Threatened (THR) and common nighthawk (*Chordeiles minor*) – Special Concern species, based on OBBA site records which identified the presence of these species in the area, as garnered from the background data review. All observations and data collection were compiled by an experienced field biologist.

Three evening amphibian call surveys (4 call count stations per survey) were conducted following the protocols outlined in the Marsh Monitoring Program (Bird Studies Canada *et al.* 2009). The survey

dates were April 30, May 23 and June 7, 2018. All observations and data collection were completed by an experienced field biologist. A property off of Cranberry Trail East (known locally as Cranberry Marsh) was surveyed in tandem with the on-site amphibian call surveys, as a control site.

Incidental wildlife observations (birds, mammals, amphibians and reptiles) were also recorded during all botanical inventories. Evidence of presence of wildlife included direct sightings, calls, tracks, scats, nests, dens, browse, carcasses, etc. All wildlife surveys were conducted under favourable weather conditions according to the MNRF protocols. There were no marginal or adverse weather conditions encountered during any of the surveys. The following subsections provide details on the methods used to ascertain wildlife and wildlife usage within and abutting the subject property.

3.4.1.1 Dawn Breeding Bird Surveys

The first dawn breeding bird survey was conducted on June 8, 2018 between 5:00a.m. and 8:30a.m., with the second survey undertaken on June 22, 2018 between 5:15am and 9:00am. The breeding bird point counts (8 stations) followed standard MNRF protocols, situated within various terrestrial and wetland habitats, with site surveys spaced more than one week apart under suitable weather conditions (low wind, little or no precipitation) following the breeding evidence of the Ontario Breeding Bird Atlas (Bird Studies Canada *et al.* 2006). All bird species seen and heard on or abutting the subject property were tallied. Observations were coded using behavioural codes of the OBBA (e.g., S – Singing Male, P – Pair, etc.).

3.4.1.2 Nocturnal Wildlife Survey

Nocturnal bird and other wildlife surveys were conducted on two evenings: June 29 and July 29, 2018. All surveys were coincident with the full moon phase and the recommended timing following the 2015 Ontario Whip-poor-will Surveys technical guide by MNRF (2015a). Primary focus was on the detection of SAR birds – eastern whip-poor-will (*Caprimulgus vociferous*) (Threatened -THR) and common nighthawk (*Chordeiles minor*) (Special Concern - SC) that were listed on previous OBBA surveys (Bird Studies Canada *et al.* 2006). Surveys were conducted under favourable weather conditions at a point count station along the eastern edge of the forested valley features. The point count duration was 10 minutes. A Control Station was sampled on the same evenings to establish whether whip-poor-will were calling locally and hence likely to be detected on and/or adjacent to the property on the selected sampling evenings. The general location was Flos Road 10 E (north of Orr Lake) at UTM coordinates 17T593044 m E and 4941075 m N.

3.4.1.3 Amphibian Surveys

Three evening amphibian call count surveys were conducted, with the first at the end of April due to poor weather conditions (below zero C in the evening or $< 5^{\circ}\text{C}$) for most of the month. Amphibian surveys were conducted on April 30, May 23, and June 7, 2018 following the protocols outlined in the Marsh Monitoring Program (Bird Studies Canada *et al.* 2009). Given the lack of on-site and abutting wetland features with sufficient water depths during the breeding season, this level of effort was deemed adequate to assess the presence of any calling amphibians during their breeding season. The surveys were all conducted within accepted limits and there were no concerns regarding reduced activity due to inclement weather save and except for the marginal April 30, 2018 survey. As during all site visits, incidental wildlife observations were recorded to add to the subject property database.

3.4.1.4 Mammal Surveys

Observations of mammals were noted during all daytime and nocturnal field surveys related to wildlife, as well as incidental observations garnered during the botanical surveys. Observation dates were: October 25 and June 14, 2017; April 30, May 23, June 7, June 8, June 22, July 19 and September 7, 2018.

3.4.1.5 Reptile Surveys

Observations of reptiles were noted during all daytime and nocturnal field surveys related to wildlife, as well as incidental observations garnered during the botanical surveys. Observation dates were: October 25 and June 14, 2017; April 30, May 23, June 7, June 8, June 22, July 19 and September 7, 2018.

Standard lists and published literature used to determine the status or rarity of fauna included Environment and Climate Change Canada (2018), COSEWIC (2018), Province of Ontario (2007), MNR (2018), Austen *et al.* (1994), Bird Studies Canada *et al.* (2006), Dobbyn (1994) and Cadman *et al.* (2007). The determination for wildlife species rarity consisted of a straightforward comparison of the subject property and abutting lands wildlife species found during the various surveys, with those listed in the source references.

3.4.1.6 Fish and Fish Habitat

The only surface water on and abutting the subject property was the intermittent to permanent tributary which conveys surface drainage and seepage in a northwest to southeast direction. The tributary lies within a distinct valley feature that is bordered by various forested features, along with pockets of other wetland features. No fish were noted in this tributary, but fish habitat is present based on the littoral zone and overhanging and in-stream vegetation cover. Water depths were sufficient or of a duration at some locations as to possibly contain fish (e.g., cyprinids), although none were noted. This tributary exits the subject property at the extreme southeast corner, through a culvert underneath Osler Bluff Road. A fish habitat characterization and/or fish biomass survey following the Ontario Stream Assessment Protocol (OSAP) (Province of Ontario 2017) was not undertaken. Depending on the proposed road crossing location and type of crossing, fish data collection may be required.

3.4.2 Wildlife and Wildlife Habitat

From a terrestrial perspective, natural features (FODM3-1, FODM4-2, FODM5-10, FODM8-1, FODM5-1, FODM7-2, FODM2-2, WOMM3-1, THMM1-1, FODM11, THDM2-12/MEMM3) on and abutting the property are comprised mainly of: dry-fresh poplar deciduous forest (FODM3-1); dry-fresh white ash-hardwood deciduous forest (FODM4-2); dry-fresh sugar maple-white birch-poplar deciduous forest; fresh-moist poplar deciduous forest (FODM8-1); dry-fresh poplar mixed forest (FODM5-1); white cedar-hardwood mixed forest (FODM7-2); dry-fresh white cedar deciduous forest (FODM2-2); dry-fresh hawthorn-white cedar mixed woodland (WOMM3-1); native mixed regeneration thicket (THMM1-1); naturalized deciduous hedge-row (FODM11); and red-osier dogwood shrub thicket (THDM2-12)/dry-fresh mixed meadow (MEMM3).

Cultural terrestrial features include: annual row crop/agricultural cropland (OAGM1); and dry-fresh mixed meadow (MEMM3).

Other wetland features include: green ash mineral deciduous swamp (SWD2-2)/poplar mineral deciduous swamp (SWDM4-5); cattail mineral shallow marsh (MASM1-1); and cattail graminoid mineral meadow marsh (MAMM1-2).

All of these terrestrial natural and cultural features, as well as the other wetland features are found on-site, and some extend off-site as well. All of these vegetation communities provide varying degrees and qualities of wildlife habitat for life cycle opportunities. Typical opportunities include breeding, nesting, roosting, feeding, cover and resting for birds, mammals, amphibians, reptiles and lepidoptera. All wildlife species observed during all flora and fauna inventories were noted and recorded. **Figure 3** shows the type and extent of each of the vegetation communities (wildlife habitats) mapped and inventoried in 2018. Most of the bird species encountered and determined to be possible, probable or confirmed breeders are considered rural-tolerant and urban-tolerant wildlife species. All other wildlife species are typical for this geographical area and are considered to be breeding in suitable habitats.

The following sub-sections provide summaries of the wildlife inventories conducted on the property during June 14 and October 25 of 2017 and spring, summer and fall months of 2018 during other surveys.

3.4.2.1 Birds

A total of forty-eight (48) bird species were detected during the dawn breeding bird surveys conducted at the eight (8) point count stations (as shown on Figure 4), and as listed in Appendix E. Of these species, forty (37) bird species showed some evidence of breeding (possible, probable, or confirmed) in the diverse variety of habitats on the property. Four (5) bird species were observed flying overhead. The remaining four (6) bird species were observed in suitable habitat but with no breeding evidence noted.

Examples of bird species considered common and breeding on the subject property and within this geographic area include: northern cardinal (*Cardinalis cardinalis*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), blue jay (*Cyanocitta cristata*), savannah sparrow (*Passerculus sandwichensis*), song sparrow (*Melospiza melodia*), chipping sparrow (*Spizella passerina*), American goldfinch (*Carduelis tristis*), red-winged blackbird (*Agelaius phoeniceus*), brown-headed cowbird (*Molothrus ater*), common grackle (*Quiscalus quiscula*), gray catbird (*Dumetella carolinensis*), black capped chickadee (*Poecile atricapillus*), yellow warbler (*Setophaga petechia*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides villosus*), and American robin (*Turdus migratorius*).

No whip-poor-will or common nighthawk were heard or observed during the two nocturnal wildlife surveys conducted on two consecutive evenings (June 28 and June 29, 2018) during the “Mid-season (good, mid-breeding)” – “Preferred & Alternate Timing” survey window associated with the during full moon phase on June 28, 2018, as per Bird Studies Canada recommendations. Surveys were completed from point count stations established to provide coverage of the property and adjacent lands (See Figure 4). Surveys were completed starting at least 30 minutes after sunset under the following conditions.



LEGEND

-  PROPERTY BOUNDARY
-  BREEDING BIRD POINT COUNT STATION LOCATION



1 : 2500

No.	Revision	Date	Int.

THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY ERRORS OR OMISSIONS TO THE CONSULTANT BEFORE COMMENCING OR PROCEEDING WITH ANY WORK.

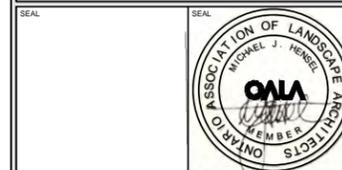
DO NOT SCALE THIS DRAWING.

Hensel Design Group
 Advancing Sustainable Development Solutions
 372 Fiel St. Collingwood, Ontario, L9Y 3N4
 Phone: 705-443-8394 Fax: 705-443-8494

PROJECT

BLUE VISTA
 Town of The Blue Mountains, Ontario

TITLE
Breeding Bird Point Count Stations



Scale: 1:2500	Drawing No.
Date: 2019 / 04 / 02	Fig.4
CAD File: HDG_BLUEVISTA-ELC-2019	
Drawn by: DC	
Checked by: MH	
Job No:	

- June 28, 2018 – Start Time 12:31am, Temperature +23oC, Wind B0 – B4 Variable West, Cloud Cover <5%, Precipitation Nil, Moon full, visible (central) & bright, Observer – Jim Broadfoot;
- June 29, 2018 – Start Time 10:57pm, Temperature +26oC, Wind B0-B2 Variable South, Cloud Cover %, Precipitation Nil, Moon nearly full, visible (low southwest) & bright, Observer – Jim Broadfoot

Point count survey duration was 10 minutes. A Control Station was sample on the same evenings to establish whether whip-poor-will were calling locally and hence likely to be detected on and/or adjacent to the property on the selected sampling evenings. The general location of the Control Station was Flos Road 10E (north of Orr Lake) 17T593044 East and 4941075 West.

No eastern whip-poor-will or common nighthawk were detected on or adjacent to the Blue Vista property. Calling eastern whip-poor-will were detected at the Control Site on both evenings sampled.

3.4.2.2 Mammals

Table 2 contains a summary of the mammal species detected on and abutting the property. The list includes the following mammal species: meadow vole (*Micropterus pennsylvanicus*), eastern cottontail (*Sylvilagus floridanus*, S5); eastern chipmunk (*Tamias striatus*, S5); eastern gray squirrel (*Sciurus carolinensis*, S5); red squirrel (*Tamiasciurus hudsonicus*), raccoon (*Procyon lotor*), American porcupine (*Erezithon dorsatum*), groundhog (*Marmota monax*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and white-tailed deer (*Odocoileus virginianus*). None of these species are listed as a Species At Risk (SAR) under the **Endangered Species Act, 2007** (Province of Ontario 2007). The documenting of the vertebrate terrestrial species (birds, mammals, amphibians and reptiles) on the subject property was based on visual contact (direct sightings) and/or on the basis of indirect evidence (e.g. vocalizations, tracks, scats, pellets, burrows, nests, feathers, browse, etc.). The incidental wildlife survey was conducted concomitant with the botanical inventories.

Table 2. List of Mammal and Herpetofauna Species Observed or Heard on or Abutting the Blue Vista Property

Common Name	Scientific Name
Mammals	
meadow vole	<i>Micropterus pennsylvanicus</i>
eastern cottontail	<i>Sylvilagus floridanus</i>
eastern chipmunk	<i>Tamias striatus</i>
eastern gray squirrel	<i>Sciurus carolinensis</i>
red squirrel	<i>Tamiasciurus hudsonicus</i>
northern raccoon	<i>Procyon lotor</i>
American porcupine	<i>Erezithon dorsatum</i>

groundhog	<i>Marmota monax</i>
coyote	<i>Canis latrans</i>
red fox	<i>Vulpes vulpes</i>
white-tailed deer	<i>Odocoileus virginianus</i>
Amphibians and Reptiles	
spring peeper	<i>Pseudacris crucifer</i>
northern leopard frog	<i>Lithobates pipiens</i>
American toad	<i>Bufo americanus</i>
gray treefrog	<i>Hyla versicolor</i>
eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>
Lepidoptera	
monarch	<i>Danaus plexippus</i>

3.4.2.3 Herpetofauna

Table 3 contains a list of herpetofauna (amphibians and reptiles) detected on and abutting the property. Amphibian species detected or observed in very low numbers included: spring peeper (*Pseudacris crucifer*); northern leopard frog (*Rana pipiens*), American toad (*Bufo americanus*), and gray treefrog (*Hyla versicolor*). A single eastern garter snake (*Thamnophis sirtalis sirtalis*) was noted in THDM2-12/MEMM3 feature on the west side of the property.

The results of evening amphibian calling surveys (Call Stations 1-4 as shown on Figure 5) revealed minimal calling activity (Code 1, with minimal numbers of 1-2 and Code 2), with no abundant calls (Code 3) at any of the Call Stations. Call Stations were surveyed on April 30, May 23, and June 7, 2018. The majority of the call were restricted to the intermittent creek valley features, with American toad more prevalent in the mixed meadow features (MEMM3).

Spring peeper, wood frog (*Lithobates sylvaticus*), western chorus frog (*Pseudacris triseriata*), and gray treefrog were all heard calling (some in abundance – Code 3) at the Control Station located at Cranberry Marsh off of Cranberry Trail East (UTM 17T 559528 m E 4929128 m N). A comparison of the Control Station with the property leads to the conclusion that the property does not provide quality terrestrial and/or aquatic amphibian breeding habitat, due primarily to the lack of ponded water and of a sufficient depth during breeding season.

Table 3. Results of Evening Calling Amphibian Surveys for Blue Vista Property 2018, Town of the Blue Mountains

Common Name	Scientific Name	30-Apr-18					23-May-18					07-Jun-18					Conservation Rank		
		On-site #1	On-site #2	On-site #3	On-site #4	Control Site ²	On-site #1	On-site #2	On-site #3	On-site #4	Control Site	On-site #1	On-site #2	On-site #3	On-site #4	Control Site	S Rank	SARO Status	COSEWIC Status
spring peeper	<i>Pseudacris crucifer</i>		2-4	1-1		2-3		1-3	1-1		3		1-3	1-2	3	S5			
American toad	<i>Anaxyrus americanus</i>								1-2		1-2			2-4	1-2	S5			
Western chorus frog	<i>Pseudacris triseriata</i>					3					3				2-4			THR	
northern leopard frog	<i>Lithobates pipiens</i>		1-3	1-2			1-1	1-2			1-2		1-3		1-3				
gray tree frog	<i>Hyla versicolor</i>						1-1	1-3	1-2	1-1	1-2	1-1	2-4	1-1	1-1	3	S5		
Observation Conditions:																			
April 30, 2018 - Start Time: 1900hr, Air Temp. +7oC, Wind B2 Southeast, Cloud 20%, Precip. Nil, Observer David G. Cunningham																			
May 23, 2018- Start Time: 2030hr, Air Temp. +10oC, Wind B2 Northwest, Cloud 20%, Precip. Nil, Observer David G. Cunningham																			
June 7, 2018 - Start Time: 2130hr, Air Temp. +21oC, Wind B2, Cloud 5%, Precip. nil, Observer David G. Cunningham																			
¹ Call Code: 3 - Full Chorus; 2-# - Overlapping Calls number of individuals calling total; 1-# - Non-overlapping Calls number of individuals calling total ² Control Site: Cranberry Marsh, Collingwood (off of Cranberry Trail East) NAD83, UTM17T 559528 m E 4929128 m N																			



LEGEND

- PROPERTY BOUNDARY
- 1 BREEDING AMPHIBIANS POINT COUNT STATION LOCATION



1 : 2500

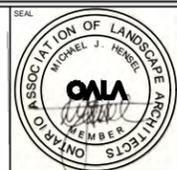
No.	Revision	Date	Int.

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PROJECT
BLUE VISTA
 Town of The Blue Mountains, Ontario
 TITLE
Breeding Amphibians Point Count Stations



Scale: 1:2500
 Date: 2019 / 04 / 02
 CAD File: HDG_BLUEVISTA-ELC-2019
 Drawn by: DC
 Checked by: MH
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Fig.5

The only reptile species noted was eastern garter snake (*Thamnophis sirtalis sirtalis*), observed within the mixed meadow habitat (MEMM3) on the east side of the property. There were no typical snake hibernacula noted on the property.

3.4.3 Habitat Connectivity/Linkage

Natural habitats (terrestrial and wetland vegetation communities) are lacking in the vicinity of the property to the north, south, west and east. Lands to the west and partially to the south has been cleared for approved future residential development. Land use to the north consists of an as-built residential subdivision and golf course. Lands to east of Osler Blue Road consist of as-built rural lots in the Town of Collingwood. Therefore habitat connectivity and ecological linkage functions are lacking or are of poor quality for wildlife abutting the property.

4. Significant Natural Heritage Features

The following is an assessment of significant natural heritage features that must be included in the environmental assessment of proposed developments. Under the Provincial Policy Statement, it is the responsibility of the planning authorities to identify significant natural heritage features, including significant valleylands, wetlands, woodlands, and wildlife habitat. The following sections provide an evaluation of the subject lands' existing features in context with the MNR criteria for the identification of significance under the Provincial Policy Statement and the related potential impacts associated with the development proposal. These criteria are then compared to the actual site conditions to determine if the potential for significance exists. These criteria are detailed in the Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (April 2010).

4.1 Significant Valleylands

There are no significant valleylands on the subject lands.

4.2 Significant Woodlands

The Grey County and The Blue Mountains Official Plans have both identified Significant Woodland on the subject lands (See Appendix A).

4.3 Significant Wetlands

There are no Provincially Significant Wetlands on the subject lands.

4.4 Significant Wildlife Habitat Assessment

Only one of the SWH criteria applies to the property based on the Significant Wildlife Habitat (SWH) assessment (MNR 2015b) summarized on Table 4, The relevant SWH criteria follows: Special Concern & Rare Wildlife Species, as it pertains to eastern wood-pewee, wood thrush and monarch butterfly – all designated as Special Concern species under the *ESA, 2007* (Province of Ontario 2007). Based on the dawn breeding bird surveys and other observations garnered from the flora inventories, the eastern wood- pewee and wood thrush were assessed as possible breeders. The designation of Candidate Significant Wildlife Habitat is left to the discretion of the Town. At present, none of the

Table 4. Significant Wildlife Habitat Assessment, Ecoregion 6E – Blue Vista, Town of The Blue Mountains

SWH Category	SWH Function	SWH Criteria	Assessment
Seasonal Concentration Area	Waterfowl Stopover & Staging Areas (Terrestrial)	Mixed waterfowl species aggregations of >100 birds within flooded field areas used annually during spring migration (mid-March to May).	No suitable habitat
	Waterfowl Stopover & Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlets & watercourses used by aggregations of > 100 of listed waterfowl for 7 days during spring and autumn migration. Listed Species: Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Widgeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Scaup (Lesser & Greater), Long-tailed Duck, Surf Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback, Redhead.	No suitable habitat (ponds, marshes, bays, etc.)
	Shorebird Migratory Stopover Area	Shorelines of lakes, rivers and wetlands including beach areas, bars, groynes and muddy/un-vegetated shoreline habitat used by 3 or more listed species demonstrating > 1000 “shorebird use days” (i.e., accumulated number of shorebirds over the course of the spring or autumn migration period) or sites used by >100 Whimbrel for 3 or more years. Listed Species: Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird’s Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin.	No suitable habitat (shoreline of lakes, rivers, wetlands and beaches)
	Raptor Wintering Area	Combinations of fields and woodlands providing roosting, foraging and resting habitat utilized by at least 10 individuals of 2 listed species used regularly for at least 20 days in 3 of 5 years or used by one or more Short-eared Owls. Listed Species: Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, Snowy Owl, Short-eared Owl.	No stick nests found
	Bat Hibernacula	Caves, mine shafts, underground foundations and Karst formations utilized by bat species during winter.	Not reported as hibernation site. No suitable habitat (e.g., abandoned structures or mines, foundations and Karst formations)
	Bat Maternity Colony	Wildlife cavity trees within deciduous or mixed forest communities having >10, large diameter (i.e., >25cm diameter at breast height) trees containing cavities or loose bark pockets of sufficient size to housing five or more adult bats	Not assessed. Low potential within woodland features (FOCM2-2, WOMM3-1, THMM1-1, FODM3-1, FOMM5-1) due to lack of typical snag trees (maples, oaks, beech), mostly young to mid-successional eastern white cedar, ash, poplars and shrubs All other woodland features will remain intact within the intermittent tributary valley
	Bat Migratory Stopover Area	No Criteria Established. Locations and characteristics of stopover habitats generally unknown.	Not applicable – no criteria to evaluate
	Turtle Wintering Area	Areas of deep water associated with core habitat utilized by turtles throughout the year often in the vicinity of areas of concentrations of basking turtles noted on warm, sunny days in autumn (September – October) or spring (March – May)	No suitable habitat
	Snake Hibernacula	Animal burrows, rock fissures and other structures that allow underground access below frost and open wetlands containing sparse trees or shrubs cover providing hummocks or	Not reported as hibernation site, no evidence of specialized hibernation habitat on-site (e.g., fractured rock

SWH Category	SWH Function	SWH Criteria	Assessment
		depressions with sphagnum moss or sedge ground cover. Areas of observed concentrations of five or more snakes or two or more snake species observed on sunny, warm days in spring (April-May) and autumn (September-October)	outcrops, talus slopes, etc.)
	Colonial Bird Nesting (Bank & Cliff)	Sites with exposed soil banks either natural (mainly along shorelines, rivers) or exposed as part of aggregate extraction/material stockpiling. Presence of 1 or more nesting sites with 8 or more pairs of Cliff Swallows or > 50 Bank Swallow or Northern Rough-winged Swallow during the breeding season.	No suitable habitat (bank & cliff)
	Colonial Bird Nesting (Tree/Shrub)	Sites having live or dead trees in wetlands, lakes, islands or peninsulas having > 5 active Great Blue Heron nests or active heronries of other species (Black-crowned Night-heron, Great Egret, Green Heron).	No suitable habitat (wetlands, lakes, islands or peninsulas). Other wetland (SWD2-2) contains live trees, no dead trees
	Colonial Bird Nesting (Ground)	Nesting colonies of gulls and terns on islands or peninsulas having > 25 active nests for Herring Gulls or Ring-billed Gulls or > 5 active Common Tern nests or > 2 active Caspian Tern nests or any active nests of Little Gull or Great Blacked-backed Gull. Farm ditches or streams having low shrub cover utilized by 5 or more pairs of Brewer's Blackbirds during the nesting season.	No suitable habitat (islands or peninsulas)
	Migratory Butterfly Stopover Area	Meadows and thickets over 10ha in size with a combination of field and forest habitat located within 5km of Lake Ontario having > 5000 Monarch Use Days (MUD = number of days site used by Monarchs X number of Monarchs) during autumn migration (August – October) or MUD > 3000 MUD if Painted Lady or White Admiral are observed.	No suitable habitat for a stopover area, and subject property not located within 5 km of Lake Ontario
	Landbird Migratory Stopover Area	Woodlots over 10ha in size located within 5km of Lake Ontario used by >200 birds/day with >35 species total with at least 10 species recorded on at least 5 different survey days during spring (April-May) and autumn (August-October) migration.	No suitable habitat and subject property not located within 5 km of Lake Ontario
	Deer Yarding Area	Conifer and mixed forest and swamp communities in areas typically having snow depths > 40cm for more than 60 days that are mapped as Stratum 1 (core) or Stratum 2 deer yard by the MNR and show winter accumulations of deer tracks.	Property not located in area typically having significant depth or duration of snow cover (i.e., snow depths of >40cm for more than 60 days not usual)
	Deer Winter Concentration Area	Large (i.e., woodlots > 100ha) conifer and mixed forest and swamp communities in areas typically having relatively low snow accumulation that are utilized during winter by > 10 deer/km ² and identified by the MNR.	No evidence of intensive browsing of shrub cover typical of deer winter concentration areas was observed on the property
Rare Vegetation Communities	Cliffs & Talus Slopes	Any Ecological Land Classification (ELC) vegetation type for Cliffs or Talus Slopes associated with a vertical to near vertical rock face >3m high.	No cliffs and talus slopes in or adjacent to the subject property
	Sand Barren	Area of exposed sand with sparse vegetation and underlying rock protruding the surface in places. Site not dominated by exotic or introduces species (i.e., <50% vegetative cover by non-native plant species).	No sand barren on or adjacent to the subject property
	Alvar	Area of exposed calcareous bedrock sand with sparse vegetation and shallow soils. Site not dominated by exotic or introduces species (i.e., <50% vegetative cover by non-native plant species) and in excellent condition with few conflicting land uses.	No alvar on or adjacent to the subject property
	Old Growth Forest	Forest communities over 30ha with at least 10ha of "100m forest interior" dominated by trees over 140 years old with a mosaic of gaps establishing a multi-layered canopy with no evidence of forestry activities.	Woodlands of property do not contain old trees, most trees are early to mid-successional (re-growth), indicative of past farming activities, cutting and other disturbances
	Savannah	Tallgrass Prairie habitat having tree cover between 25% and 60%	No savannah on or adjacent to subject property
	Tallgrass Prairie	Open grassland having tree cover <25% containing one or more Prairie indicator plant species.	No tallgrass prairie on or adjacent to subject property

SWH Category	SWH Function	SWH Criteria	Assessment
	Other Rare Vegetation Community Type	Any ELC vegetation community having a sub-national (S Rank) of S1, S2 or S3 as assigned by the MNR.	No vegetation community with a S1, S2 or S3 sub-national rank known on or adjacent to property
Specialized Habitat for Wildlife	Waterfowl Nesting Area	All lands adjacent (i.e., within 120m) of wetlands over 0.5ha in size or clusters of 3 or more small (<0.5) wetlands where waterfowl breeding is known to occur that contain 3 or more nesting pairs of listed species excluding Mallard or 10 or more nesting pairs including Mallard or any active nest site of American Black Duck. Listed Species: American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Mallard.	No suitable habitat
	Bald Eagle & Osprey Nesting, Foraging & Perching Habitat	Forest and swamp wetlands directly adjacent to lakes, rivers, ponds and other wetlands where nesting by Osprey or Bald Eagle is confirmed. Within 300m of active Osprey nest or 400-800m of an active Bald Eagle nest.	No suitable habitat
	Woodland Raptor Nesting Habitat	Forests and conifer plantations >30ha with >10ha of "200m interior forest habitat" containing active nests of listed species. Within 400m of an active Red-shouldered Hawk or Northern Goshawk nest or 200m of an active Barred Owl nest or 100m of an active Broad-winged Hawk or Cooper's Hawk nest or 50m of a Sharp-shinned Hawk nest. Listed Species: Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk.	No suitable interior habitat conditions. No indicator bird species detected in habitat on or adjacent to property
	Turtle Nesting Area	Areas of exposed sand and gravel in proximity to wetlands and waterbodies providing undisturbed shallow weedy areas utilized by turtles having 5 or more nesting Midland Painted Turtles or one or more nesting Northern Map Turtle or Snapping Turtle plus travel routes between wetlands and nesting areas.	No suitable habitat or species found
	Seeps & Springs	Forested headwaters of stream or river system containing 2 or more seeps/springs.	Seeps evident on the property, mostly in FODM5-10, FODM4-2, SWDM2-2 and MAMM1-2 All of these habitats will remain intact
	Amphibian Breeding Habitat (Woodland)	Forests and swamp wetlands containing permanent or vernal pools containing water in most years until mid-July having a breeding population of 1 or more listed species with at least 20 individuals (adults, juveniles, eggs/larval masses). Listed Species: Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog.	No indicator amphibian species detected in sufficient numbers during evening amphibian call station surveys in April, May and June
	Amphibian Breeding Habitat (Wetland)	Wetlands and pools (including vernal pools >0.05ha) located >120m from woodlands having a breeding population of 1 or more of the listed salamander species or 3 or more of the listed frog species with at least 20 breeding individuals or wetlands with confirmed breeding by Bullfrog. Listed Species: Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bull Frog, and American Toad.	No indicator amphibian species detected in sufficient numbers during evening amphibian call station surveys, and internal other wetlands during April, May and June
	Habitat of Species of Conservation Concern	Marsh Bird Breeding Habitat	Wetlands containing 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 5 or more of the listed species or any wetland with breeding of 1 or more Black Tern, Trumpeter Swan, Green Heron or Yellow Rail. Listed Species: American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan, Black Tern, and Yellow Rail.

SWH Category	SWH Function	SWH Criteria	Assessment
	Woodland Area-sensitive Bird Breeding Habitat	Large mature forest stands over 30ha having "200m interior habitat" with breeding pairs of 3 or more listed species or any site with breeding by Cerulean Warbler or Canada Warbler. Listed Species: Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren, Cerulean Warbler, Canada Warbler.	Woodlands do not provide 200m interior habitat and are not over 30ha in size. None of the listed species, with the exception of red-breasted nuthatch were observed on the property, but no breeding pairs of 3 of more listed species
	Open County Bird Breeding Habitat	Grasslands >30ha in size not actively used for farming (i.e., not Class 1 or 2 farmland) with breeding by 2 or more listed species or 1 or more breeding Short-eared Owls. Listed Species: Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl.	No suitable habitat of sufficient size, although vesper sparrow and savannah sparrow were observed during the dawn breeding bird surveys, but only as possible breeders, no confirmed breeding.
	Shrub/Early Successional Bird Breeding Habitat	Large field areas succeeding to thicket >10ha in size not actively used for farming (i.e., not Class 1 or 2 farmland) with breeding by 1 of the listed species and at least 2 of the common species of a thicket having breeding Yellow-breasted Chat or Golden-winged Warbler. Listed Species: Indicator Spp.: Brown Thrasher, Clay-colored Sparrow; Common Species: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher; Other Spp. Yellow-breasted Chat, Golden-winged Warbler.	No suitable habitat of sufficient size, only listed species was brown thrasher that was observed on the subject property as a possible breeder, no confirmed breeding
	Terrestrial Crayfish	Meadows and edges of shallow marshes containing 1 or more individuals or chimneys of Chimney or Devil Crayfish.	No crayfish chimneys detected
	Special Concern & Rare Wildlife Species	Site containing wildlife species listed as Special Concern or having a sub-national (S Rank) of S1, S2 or S3 as assigned by the MNRF.	Eastern Wood-pewee, wood thrush and monarch designated as a Special Concern species in Ontario Eastern wood pewee and wood thrush observed and heard in the valleyland forested features - Candidate
Animal Movement Corridors	Animal Movement Corridors	Movement corridors linking amphibian breeding habitat and summer habitat containing native vegetation and free of gaps such as fields, waterways, waterbodies or developed lands that are >200m wide and having gaps <20m wide. If following a riparian area corridor should include vegetation 15m of either side of watercourse.	No indicator amphibian species or quality breeding habitat on property
	Deer Movement Corridors	Forest habitat associated with watercourses and ridges that are >200m wide and having gaps <20m wide. If following a riparian area corridor should include vegetation 15m of either side of watercourse. Corridors leading to deer wintering yards should be unbroken by roads or residential areas.	No deer winter concentration area on the property. Property and adjacent lands not in a landscape where traditional deer yarding occurs given the on-going land clearance to facilitate approved residential development to the west and south, and as-built residential lots and golf course to the north

natural and cultural terrestrial features and/or other wetland features are designated as SWH in the Town's Official Plan. Regardless, the forested habitats in the valleyland where the eastern wood pewee and wood thrush were observed will remain intact. Most of the mixed meadow habitats (MEMM3) where monarchs were observed are intended for removal, albeit that monarch is only a SC species and has not been afforded protection under the **ESA, 2007** (Province of Ontario, 2007),

4.5 Natural Heritage Information Centre

A search of the Natural Heritage Information Centre did not reveal any records for any flora or fauna species recorded within the two 1km x 1km squares (17NK5627 and 17NK5628) which cover the subject lands. Both squares identified that the Niagara Escarpment Biosphere Reserve is in proximity to the subject lands.

4.6 Species at Risk Act

With the exception of Butternut (*Juglans cinerea*), none of the flora or fauna found on the property are listed as endangered (END) or threatened (THR) in the provincial **Endangered Species Act, 2007** (Province of Ontario 2007). A total of ten butternut trees were found on the property along the south property perimeter. The GPS coordinates for each tree are listed in Appendix F, with the locations shown on Figure 3. A butternut health assessment (BHA) following the MNRF BHA assessment guidelines was not undertaken, nor warranted, given their location being far removed (+50m) from the defined limit of development.

Three species listed as Special Concern (SC) species were found on the property and abutting the property. There were two (2) bird species, eastern wood-pewee and wood thrush. Both species were observed and/or heard calling once during the June 7, 2018 dawn breeding bird survey and were assessed as possible breeders. Both were located in the forest/other wetland features in the intermittent creek valley, with these natural features remaining intact. The other Special Concern species is monarch, which was observed in the mixed meadow (MEMM3) habitats.

There are three bat species that are listed as Endangered (END) under the **ESA, 2007**. The species are Northern Myotis (*Myotis septentrionalis*), Little Brown Bat (*Myotis lucifugus*) and Tri-colored Bat (*Perimyotis subflavus*). A review of NHIC did not show any tracked records for these species. Efforts were made to identify and locate potential bat snag trees in the relevant ELC features listed in the MNRF Technical Note for Species At Risk Bats (MNRF 2015c). The Technical Note is intended to provide direction in the assessment of habitat for endangered bat species. Based on a review of this internal document, relevant on-site ELC units are FOD, FOM, FOC and SWD. Specifically, White Cedar-Hardwood Mixed Forest – FOMM7-2 (#2); Green Ash Mineral Deciduous Swamp – SWDM2-2/Poplar Mineral Deciduous Swamp – SWD4-5 (#3); Dry-Fresh White Cedar Coniferous Forest – FOCM2-2 (#5); Dry-Fresh Poplar Mixed Forest – FOMM5-1 (#13); and Fresh-Moist Poplar Deciduous Forest – FODM8-1). However a formal bat snag survey following the MNRF (2015c) inventory protocols was not undertaken based primarily on the small percentage of the overall tree cover to be removed and the cursory lack of bat snag habitat.

It is our professional opinion that the amount of forest cover to be retained on-site in conjunction with the contiguous forest cover off-site affords adequate potential for maternity roosting habitat. There would be low potential to impact maternity roosting habitat for any endangered bats. As a result, there

will be no contravention of the **ESA, 2007**. As per MNRFs similar positions for residential developments in or near potential maternity roosting habitat, that a standard timing window for tree removal outside of the active season for bats would avoid potential impacts under Section 9 of the **ESA, 2007**, namely no tree removal between April 1st to October 31st.

4.7 Fisheries Act

The intermittent tributary that meanders in a northwest to southeast direction through the forested valley floor did not appear to contain fish, although no fish biomass inventories were undertaken, given the lack of water and lack of defined bank and bottom. The littoral zone and abutting aquatic/wetland vegetation, along with over-hanging branches and woody debris would likely constitute fish habitat. However, the proposed limit of development is well removed from this aquatic feature, with the exception of the proposed internal road crossing to join the east and west residential development blocks and parkland.

5. Proposed Development Concept

The proposed development for the subject lands is a Draft Plan of Subdivision for 133 single family lots (See Figure 6). Should the Town of The Blue Mountains want to increase the density of the proposed development plan, this can be facilitated by converting some of the larger single lots to semi-detached lots. This can potentially increase the unit count to approximately 180 dwelling units.

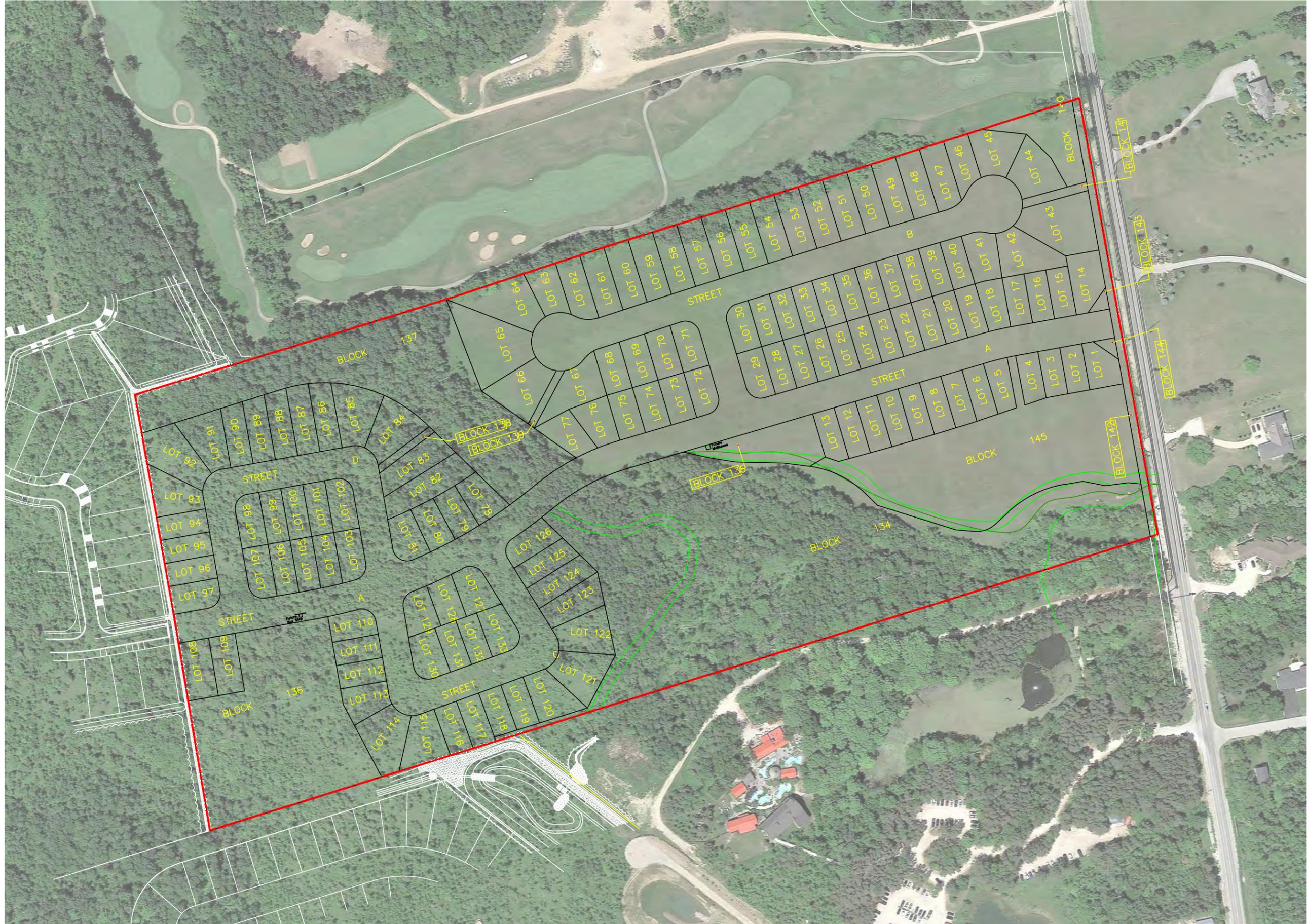
The post development drainage plan for the proposed development concept was prepared by C.C. Tatham & Associates and is described in their Preliminary Stormwater Management Report, dated February 27, 2019.

The proposed development concept maintains the whole of the north-east face of the existing woodland edge. Two small areas of wetland cover type will be removed however the majority of existing wetland will be retained and a variable buffer generally in excess of 15m was considered in establishing the limits of development. The majority of buffer width from wetland to development limits is greater than 20-30m wide.

6. Impacts Assessment

Potential impacts to the existing natural heritage systems located on the subject and adjacent lands resulting from the proposed development plan were compiled through research of literature and relevant authorities. The current plan for the proposed development is based on efforts to avoid impacts to the natural heritage features and functions of the subject and adjacent lands, achieve an economically feasible development, and accommodate engineering requirements.

A summary of anticipated impacts from development and proposed mitigation is outlined in Table 5.



LEGEND

- PROPERTY BOUNDARY
- PROPOSED DEVELOPMENT
- EROSION HAZARD LINE

N

1 : 2500

No.	Revision	Date	Int.

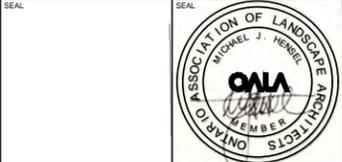
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BLUE VISTA
 Town of The Blue Mountains, Ontario

DRAFT PLAN

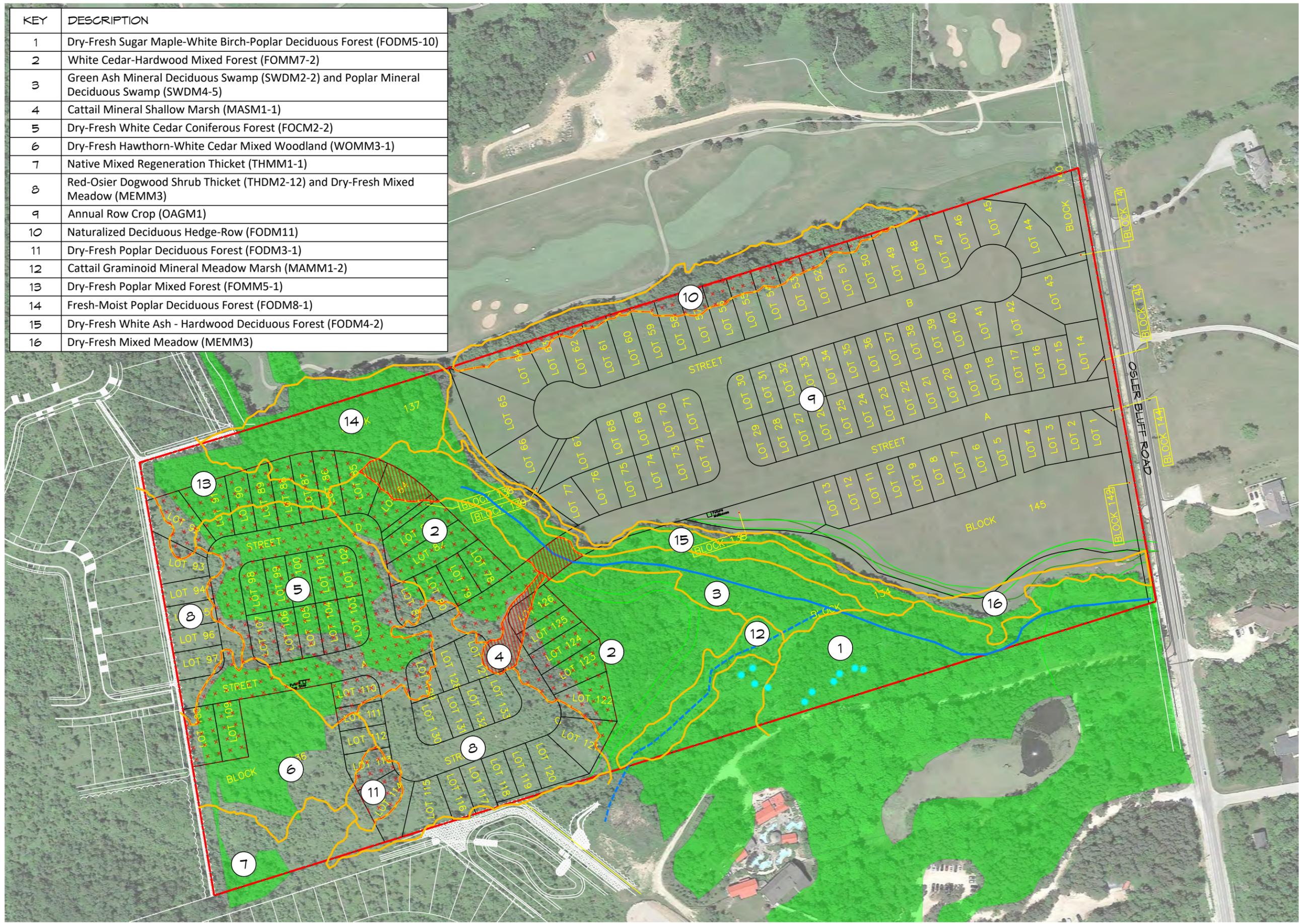


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Table 5. Summary of Potential Impacts to Natural Heritage Features

Category	Function of Feature	Potential Impact	Anticipated Impacts/Proposed Mitigation
Hydrology	Groundwater Recharge	Surface run-off will increase due to the creation of hard surfaces. Water quality will be impacted by the addition of suspended sediments and/or chemicals.	With implementation of best management practices as a part of the SWM plan prepared by C.C. Tatham (Stormwater Management Report, February 2019), post development runoff (quality and quantity) will be managed such that off-site flows will not exceed pre-development rates and water quality objectives are met.
Vegetation	Upland and Wetland Communities	The proposed development will result in removal of existing woodland and/or wetland area. <ul style="list-style-type: none"> • Parts of #2 – White Cedar-Hardwood Mixed Forest (FOMM7-2) will be removed for Lots 78-86 and Lots 121-126 and/or parts thereof • Parts of #3 – Green Ash Mineral Deciduous Swamp (SWDM2-2)/Poplar Mineral Deciduous Swamp (SWDM4-5) will be removed for Street A and Lots 84-85 and/or parts thereof • Part of #4 – Cattail Mineral Shallow Marsh (MASM1-1) will be removed for Lots 125-127 and Streets A and D and/or parts thereof • Part of #5 – Dry-Fresh White Cedar Coniferous Forest (FOCM2-2) will be removed for Lots 98-107 and Street D and/or parts thereof • Part of #13 – Dry-Fresh Poplar Mixed Forest (FOMM5-1) will be removed for Lots 86-92 and/or parts thereof • Part of #14 – Fresh-Moist Poplar Deciduous Forest (FODM8-1) will be removed for Lots 85-88 and/or parts thereof 	Approximately 3.72ha woodland cover type will be removed (See Figure 7) to facilitate road, building lot and servicing infrastructure. Additionally, approximately 0.23ha of wetland area will be removed to provide a bridge/culvert crossing of the intermittent watercourse and for the erection of two lots (84 and 85) located in the northwest corner of the development plan. Approximately 40% of the total site area will be maintained as existing woodland/wetland, naturalized stormwater management area and parkland. The removal of vegetation on the subject lands will be mitigated by proposed landscape plantings. The successional state of woodland allows for successful adaptation of new edge along the cut lines of created lots and/or roadway.
Wildlife	Species At Risk	Removal of some of the woodland area will reduce its function as habitat for area sensitive bird species; species with a low tolerance level for urban disturbance would be replaced by species more tolerant of urban settings. Species tolerant of urban settings would likely occur in higher numbers than elsewhere in non-developed areas; this would lead to some nuisance problems, as well as an increased rate of predation on native birds, mammals and amphibians from an urban area's symptomatic increase in raccoons, skunks, possums, domestic dogs and cats, and feral cats. The increased vehicular traffic may result in an increase in wildlife road mortalities.	Develop and promote a public and resident awareness program stressing the importance of preserving retained habitat on site and educating all who frequent the site about the local ecosystem functions and naturalistic landscape planting objectives.
	Bird, Mammal, Herptefaunal habitat		
Significant Natural Habitat	Landscape Connectivity	The small woodland area on the subject lands which is proposed to be removed is contiguous to other fragmented woodland areas to the north, east and south of the subject lands thereby reducing landscape connectivity.	Habitat connectivity and ecological linkage functions will be maintained within the woodland corridor connected to off-site woodland habitats located north and south of the subject lands. The woodland area within the subject lands to be removed (See Figure 7) is not contiguous to other fragmented woodland areas located off-site. Limited connectivity for wildlife movement will be maintained within the woodland corridor and existing fragmented wooded areas north and south of the subject lands.

KEY	DESCRIPTION
1	Dry-Fresh Sugar Maple-White Birch-Poplar Deciduous Forest (FODM5-10)
2	White Cedar-Hardwood Mixed Forest (FOMM7-2)
3	Green Ash Mineral Deciduous Swamp (SWDM2-2) and Poplar Mineral Deciduous Swamp (SWDM4-5)
4	Cattail Mineral Shallow Marsh (MASM1-1)
5	Dry-Fresh White Cedar Coniferous Forest (FOCM2-2)
6	Dry-Fresh Hawthorn-White Cedar Mixed Woodland (WOMM3-1)
7	Native Mixed Regeneration Thicket (THMM1-1)
8	Red-Osier Dogwood Shrub Thicket (THDM2-12) and Dry-Fresh Mixed Meadow (MEMM3)
9	Annual Row Crop (OAGM1)
10	Naturalized Deciduous Hedge-Row (FODM11)
11	Dry-Fresh Poplar Deciduous Forest (FODM3-1)
12	Cattail Graminoid Mineral Meadow Marsh (MAMM1-2)
13	Dry-Fresh Poplar Mixed Forest (FOMM5-1)
14	Fresh-Moist Poplar Deciduous Forest (FODM8-1)
15	Dry-Fresh White Ash - Hardwood Deciduous Forest (FODM4-2)
16	Dry-Fresh Mixed Meadow (MEMM3)



LEGEND

- PROPERTY BOUNDARY
- SIGNIFICANT WOODLANDS
- WETLAND VEGETATION TO BE REMOVED (+/- 0.23 ha)
- WOODLAND VEGETATION TO BE REMOVED (+/- 3.72 ha)
- EXISTING WATERCOURSE
- EXISTING INTERMITTENT WATERCOURSE
- ECOLOGICAL LAND CLASSIFICATION
- PROPOSED DEVELOPMENT
- EROSION HAZARD LINE
- BUTTERNUT TREE LOCATION
- 8 ELC CODE (SEE TABLE FOR DESCRIPTION)

N

0 10 20 40 60 80 100 m

1 : 2500

No.	Revision	Date	Int.

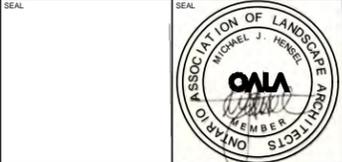
THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY ERRORS OR OMISSIONS TO THE CONSULTANT BEFORE COMMENCING OR PROCEEDING WITH ANY WORK.

DO NOT SCALE THIS DRAWING.

Hensel Design Group
 Advancing Sustainable Development Solutions
 372 Peel St. Collingwood, Ontario, L9Y 3N4
 Phone: 705-443-8394 Fax: 705-443-8494

BLUE VISTA
 Town of The Blue Mountains, Ontario

TITLE
Woodland and Wetland Removal Areas



Scale: 1:2500	Drawing No.:
Date: 2019 / 04 / 02	
CAD File: HDG_BLUEVISTA-ELC-2019	
Drawn by: DC	
Checked by: MH	
Job No.:	

Fig.7

7. Additional Recommendations

Anticipated impacts and proposed mitigation is outlined above in Table 5 and this section presents additional recommendations that should also be considered as part of the detailed design for implementation prior to, during and post-construction to help reduce or eliminate impacts to the identified natural heritage features and functions within or adjacent to the subject lands. As well, these additional recommendations provide guidance to the final detailed design of the development plan as the project proceeds through the individual lot site design process:

1. Prior to the commencement of construction, temporary barrier fencing should be installed to protect natural heritage features warranting protection from construction impacts. The barrier fence functions to avoid inadvertent intrusion from operation of machinery or other activities. The fencing should be installed under the supervision of a biologist or landscape architect, and maintained and remain in place until final grading and landscaping has been completed.
2. Barrier fencing should be placed at the property line or at the drip-line of trees where trees identified for retention and/or protection are identified. Avoid inadvertent root compaction. In the event that roots or branches of trees to be protected are inadvertently damaged during construction, they should be clean cut as soon as possible. Exposed roots should then be covered with topsoil and mulched under the guidance of a biologist, arborist or landscape architect.
3. Soft engineering and bioengineering techniques are recommended in favour of hard engineering and hardened structures (i.e. rip rap, concrete) to control surface erosion wherever possible.
4. A construction work plan should designate specific locations for stockpiling of soils and other materials, as well as ensuring that vehicle refueling occurs off-site.
5. Areas that are to be cleared for development but are planned to later undergo landscape plantings should implement plans that include native planting materials wherever appropriate.
6. Vegetation clearing should occur outside of the breeding bird season (April 15 to July 30) to prevent nest destruction and outside of April 1st to October 31st to avoid impacts to bats.
7. No further studies are required to supplement the understanding of the natural heritage features of the subject lands.

8. Conclusion

Based on the 2017 and 2018 field investigations relative to the subject lands and the corresponding proposed development plan, we conclude that the proposed development is feasible from a natural heritage perspective, in so long as the recommendations and mitigations identified herein are implemented. If designed and constructed as planned, the conclusion of the EIS is that the development will not impact the ecological features or functions of the natural heritage considerations located on and adjacent to the subject lands.

9. References

- Austen, M. J. W., M. D. Cadman and R. D. James.
1994. **Ontario Birds At Risk. Status and Conservation Needs.** Federation of Ontario Naturalists and Long Point Bird Observatory.
- Bakowsky, W.
1997. **Southern Ontario Vegetation Communities.** Natural Heritage Information Centre. Revised January 1997.
- Bird Studies Canada, Environment Canada's Canadian Wildlife Service, Ontario Nature, Ontario Field Ornithologists and Ontario Ministry of Natural Resources.
2006. **Ontario Breeding Bird Atlas Website.** <http://www.birdsontario.org/atlas/index.jsp>
- Bradley, D. J.
2013. **Southern Ontario Vascular Plant Species List.** 3rd Edition. Science & Information Branch Southern Science and Information Section. Ontario Ministry of Natural Resources, Peterborough, Ontario. SIB SSI SR-03, 78 p.
- Bruce-Grey Plant Committee.
1997a. **A Checklist of Vascular Plants for Bruce and Grey Counties, Ontario.** Bruce-Grey Plant Committee. 2nd Edition.
1997b. **A Guide to the Orchids of Bruce and Grey Counties, Ontario.** Bruce-Grey Plant Committee – Owen Sound Field Naturalists.
- Cadman, M. D., D. A. Sutherland, G. G. Peck, D. Lepage, and A. R. Couturier (eds.)
2007. **Atlas of the Breeding Birds of Ontario, 2001-2005.** Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto, xxii + 706 pp.
- Chapman, L. J. and D. F. Putnam.
1984. **Physiography of Southern Ontario.** Ontario Geological Survey. Special Volume 2, 270p. Accompanied by Map P.2715 (coloured), scale 1:600 000.
- Cody, W. J. and D. M. Britton.
1989. **Ferns and Fern Allies of Canada.** Publication 1829/E, Agriculture Canada, Research Branch, Ottawa.
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC).
2012. **COSEWIC Assessment and Status Report on the Wood Thrush (*Hylocichla mustelina*) in Canada.** COSEWIC. Ottawa ix +48 pp. (www.registrele-sararegistry.gc.ca/default_e.cfm)

2018. **Committee on the Status of Endangered Wildlife in Canada Wildlife Species Assessment & Status Reports.** COSEWIC.

County of Grey.

2013. **Grey County Official Plan.** As Approved by the Ontario Municipal Board. Office Consolidation – June 25, 2013. County of Grey.
2015. **County of Grey Digital Orthorectified Imagery.** County of Grey 2010 and 2015.

Dobbyn, J. (Sandy).

1994. **Atlas of the Mammals of Ontario.** Federation of Ontario Naturalists.

Environment and Climate Change Canada.

2018. **Species At Risk Act, 2002.** S.C. 2002, c. 29. Environment and Climate Change Canada.

Lee, H.T., W. D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. Murray.

1998. **Ecological Land Classification for Southern Ontario: First Approximation and Its Application.** Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Lee, H. T.

2008. **Southern Ontario Ecological Land Classification – Vegetation Type List.** Ontario Ministry of Natural Resources, London, Ontario. May 2008.

Macaulay Shiomi Howson Ltd. and Natural Resource Solutions Inc.

2017. **Grey County Natural Heritage System “Green in Grey”.** Prepared for Grey County. July 2017.

Ministry of Natural Resources & Forestry.

2019. **Committee on the Status of Species At Risk in Ontario (COSSARO).** MNRF.
- 2015a. **Eastern Whip-poor-will (*Caprimulgus vociferous*) and Common Nighthawk (*Chordeiles minor*) Survey Protocol – MNR Guelph District).** MNR.
- 2015b. **Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E.** Ontario Ministry of Natural Resources and Forestry, Regional Operations Division: Southern Region Resources Section, 300 Water Street, 4th Floor South, Peterborough, Ontario, Canada, K9J 8M5.
- 2015c. **Technical Note Species At Risk (SAR) Bats.** MNRF Regional Operations Division. June 2015. Internal Use Only.

Natural Heritage Information Centre.

2019. **Natural Heritage Information Centre: Biodiversity Explorer.** (accessed various dates 2017). <https://www.biodiversityexplorer.mnr.gov.on.ca/nhicWEB>.

Newmaster, S. G., A. Lehela, P. W. C. Uhlig, S. McMurray, M. J. Oldham, and Ontario Forest Research Institute.

1998. **Ontario Plant List.** Forest Research Information Paper No. 123.

Oldham, M. J. and S. R. Brinker.

2009. **Rare Vascular Plants of Ontario.** Fourth Edition. Natural Heritage Information Centre, Ontario Ministry of Natural Resources, Peterborough, Ontario. 188 pp.

Ontario Nature.

2018. **Ontario's Reptile and Amphibian Atlas.**

Province of Ontario.

2017. **Ontario Stream Assessment Protocol. Version 10-2017.** Edited by Les Stanfield.

2007. **Endangered Species Act, 2007.** S.O. 2007, Chapter 6 and Ontario Regulation 242/08 General.

Riley, J. L., J. V. Jalava, M. J. Oldham and H. G. Godschalk.

1997. **Natural Heritage Resources of Ontario: Bibliography of Life Science Areas of Natural and Scientific Interest in Ecological Site Regions 6E and 7E, Southern Ontario.** First Edition. Natural Heritage Information Centre and the Ministry of Natural Resources.

Rowe, J. S.

1977. **Forest Regions of Canada.** Published under the authority of the Minister of Fisheries and the Environment. Ottawa 1977.

Town of the Blue Mountains.

2016. **Town of the Blue Mountains Official Plan.** June 2016.

Voss, E. G.

1996. **Michigan Flora: Part 3; Dicots Concluded.** Cranbrook Institute of Science and University of Michigan Herbarium. Bloomfield Hills, Michigan. Bulletin 61.

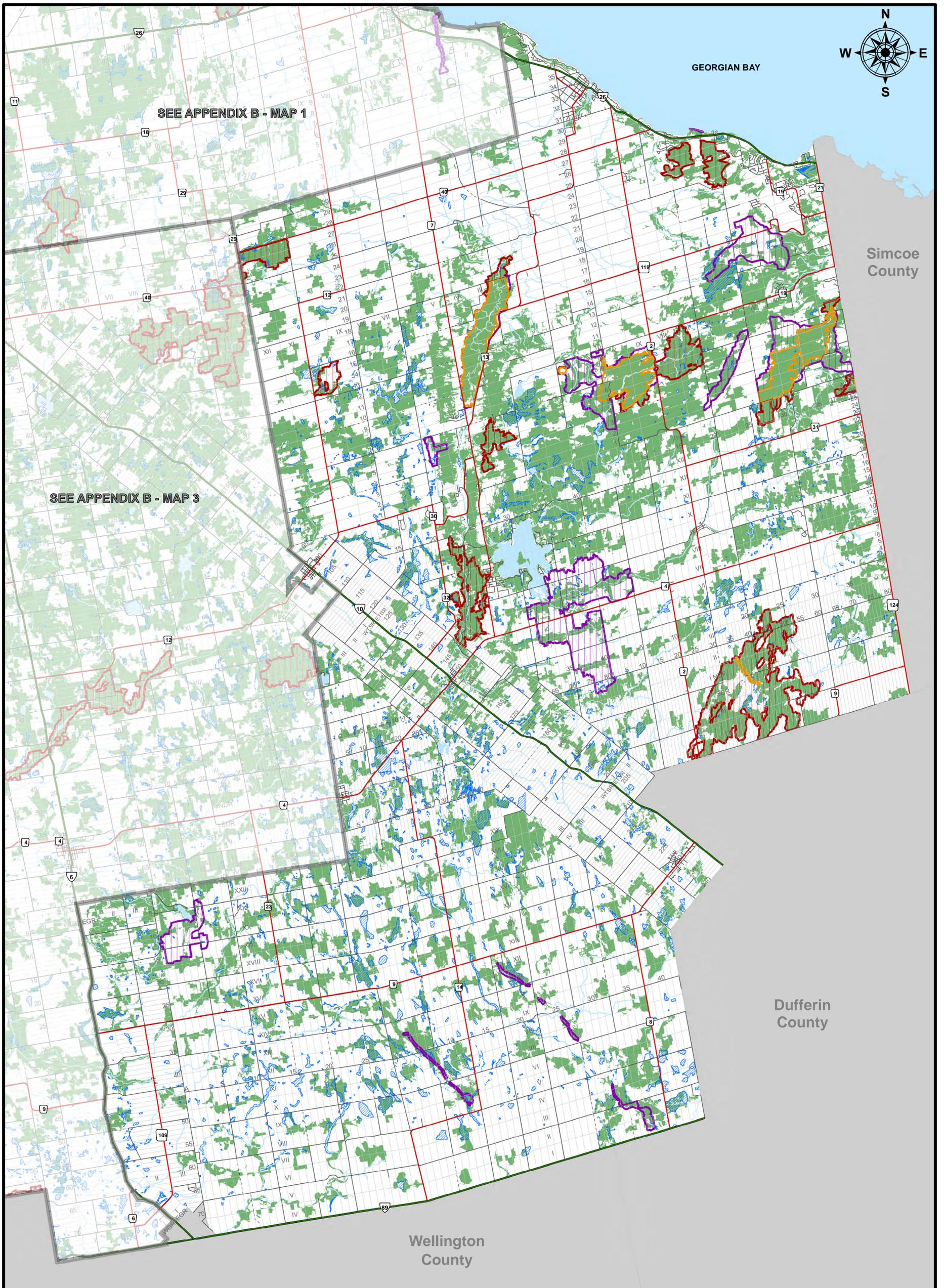
1985. **Michigan Flora: Part 2; Dicots.** Cranbrook Institute of Science and University of Michigan Herbarium, Bloomfield Hills, Michigan. Bulletin 59.

1972. **Michigan Flora: Part 1; Gymnosperms and Monocots.** Cranbrook Institute of Science and University of Michigan Herbarium. Bloomfield Hills, Michigan. Bulletin 55.

Appendix A

Grey County Official Plan

- Appendix A – Map 2
- Appendix B – Map 2



THE COUNTY OF GREY
OFFICIAL PLAN
APPENDIX B
Constraint Mapping
MAP 2

LEGEND

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Stream / River
- Other Identified Wetlands
- Lakes
- Earth & Life ANSI
- Earth ANSI
- Life ANSI
- Significant Woodlands

SCALE 1: 95,000



AUTHOR: Grey County Planning and Development
 FILE NAME: GR_OP_ApdxB_Map2eastX36.mxd
 APPLICATION: ArcMap
 DATE: Consolidated to June 25, 2013
 PROJECTION: UTM zone 17N / NAD83
 SOURCE: Teranet / Ontario Ministry of Natural Resources

INTERACTIVE MAP: maps.grey.ca
 DOWNLOAD PDF: grey.ca

This map is for illustrative purposes only. Do not rely on this map as being a precise indicator of routes, location of features or surveying purposes. This map may contain cartographical errors or omissions.

Appendix B

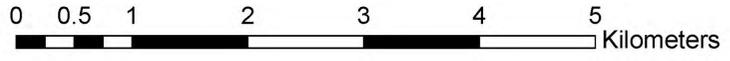
Town of The Blue Mountains Official Plan

- Appendix 1

The Blue Mountains Constraint Mapping Appendix 1

Designations

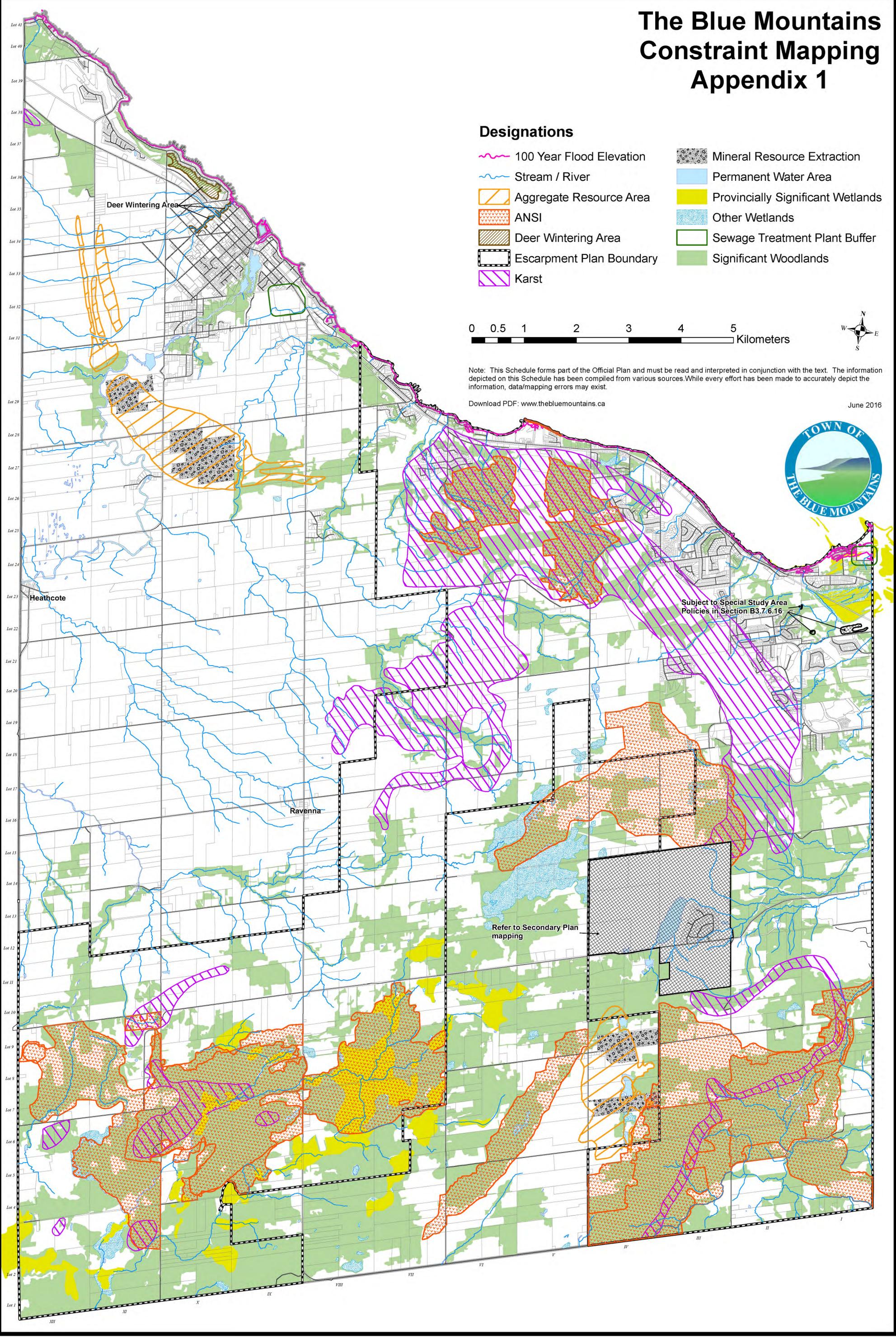
-  100 Year Flood Elevation
-  Stream / River
-  Aggregate Resource Area
-  ANSI
-  Deer Wintering Area
-  Escarpment Plan Boundary
-  Karst
-  Mineral Resource Extraction
-  Permanent Water Area
-  Provincially Significant Wetlands
-  Other Wetlands
-  Sewage Treatment Plant Buffer
-  Significant Woodlands



Note: This Schedule forms part of the Official Plan and must be read and interpreted in conjunction with the text. The information depicted on this Schedule has been compiled from various sources. While every effort has been made to accurately depict the information, data/mapping errors may exist.

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June 2016



Refer to Secondary Plan mapping

Subject to Special Study Area Policies in Section B3.7.6.16

Deer Wintering Area

Heathcote

Ravenna

Appendix C

Photographs of Plant Species Observed on the Subject Lands



Photograph 1. Northward view of Osler Bluff Road, along eastern property frontage



Photograph 2. Southward view of Osler Bluff Road along eastern property frontage



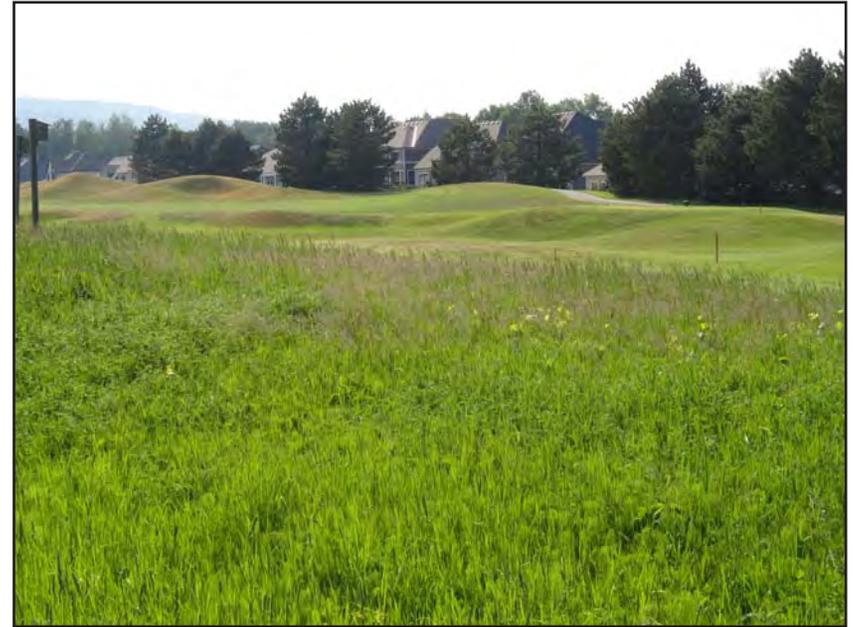
Photograph 3. View of land use to the east of the subject property, consisting of as-built rural residential lots



Photograph 4. View of land use to the west of the subject property consisting of cleared land, currently under construction for a residential subdivision



Photograph 5. View of cleared land to the south of the subject property, in preparation for construction of an approved residential subdivision



Photograph 6. View of land use to the north of the subject property, consisting of part of the Monterra Golf Club, with adjoining residential lots



Photograph 7. View along south edge of part of a small copse of dry-fresh poplar woods (FODM3-1), dominated by trembling aspen and a dense shrub stratum and weedy/grassed groundcover



Photograph 8. View inside a portion of a small woodland copse dominated by trembling aspen (FODM3-1)



Photograph 9. View of eastern edge of a narrow band characterized as dry-fresh white ash-hardwood woodland (FODM4-2), dominated by white ash, sugar maple, and Manitoba maple



Photograph 10. View inside a portion of FODM4-2, showing white ash, sugar maple, common buckthorn, choke cherry and a groundcover of field horsetail, Canada anemone, eastern bracken fern and Virginia creeper



Photograph 11. View of northern edge of dry-fresh sugar maple-white birch-white ash-poplar woodland (FODM5-10), with associates of eastern white cedar, Manitoba maple, common buckthorn, beech and scattered butternut



Photograph 12. View inside a portion of FODM5-10 on the southern side of the intermittent tributary, showing sugar maple, white ash, with typical forbs, ferns and barren groundcover (leaf duff)



Photograph 13. View of a small inclusion of MAMM1-2 along edges of the intermittent tributary at the eastern end of FODM5-10, dominated by narrow-leaved cattail, spotted jewelweed, meadow horsetail and fringed loosestrife



Photograph 14. View of western limit of MAMM1-2 inclusion in FODM5-10, showing intermittent tributary and a dense groundcover of ostrich fern, spotted jewelweed, sensitive fern and a rocky/cobble substrate with silty-clay soils



Photograph 15. View inside part of FODM8-1, a fresh-moist poplar woodland in the tributary valley, dominated by trembling aspen, balsam poplar, white birch, white elm, green ash, silky dogwood, choke cherry and red-osier dogwood



Photograph 16. Another view inside part of FODM8-1, dominated by trembling aspen, with a groundcover of Virginia creeper, herb-robert, sensitive fern, deadly nightshade, yellow avens, poison ivy, false Solomon's-seal and helleborine



Photograph 17. View inside part of FOMM5-1, a stand dominated by trembling aspen, eastern white cedar, white ash, common buckthorn, dogwoods, white birch, white elm and vines, contiguous to and west of FODM8-1



Photograph 18. Another view inside part of FOMM5-1, with a sparse to patchy groundcover, of woodland strawberry, spinulose wood-fern, enchanters nightshade, herb-robert, wild basil, Virginia creeper, helleborine and riverbank grape



Photograph 19. View inside southern block of white cedar-hardwood woodland, (FOMM7-2) of eastern white cedar, trembling aspen, white birch, along with white ash, sugar maple, white poplar, common buckthorn and Virginia creeper



Photograph 20. View of dense pole-sized eastern white cedar clump within part of FOMM7-2 south block, with a sparse to barren groundcover



Photograph 21. View of north block of FOMM7-2, dominated by a dense growth of eastern white cedar, white birch and trembling aspen, along with scattered white elm, black cherry, buckthorn and vines



Photograph 22. North block of FOMM7-2 dominated by pole-sized eastern white cedar, with copses of white birch and trembling aspen, with a groundcover of sparsely scattered weeds and forbs and barren soils



Photograph 23. View in part of a dense stand of pole-sized dry-fresh eastern white cedar (FOMM2-2), along with scattered shrubs and a sparse to barren groundcover



Photograph 24. Another view in part of FOCM2-2, dominated by a dense growth of pole-sized eastern white cedar, and a sparse to barren groundcover



Photograph 25. View of part of a stand characterized as dry-fresh hawthorn-white cedar mixed woodland (WOMM3-1) with associates in the dense understory and shrub stratum such as whit elm, dogwoods, white ash and raspberry



Photograph 26. View inside WOMM3-1 showing dense shrub stratum dominated by silky dogwood, common buckthorn, red-osier dogwood, tartarian honeysuckle, wild red raspberry, choke cherry and buffaloberry



Photograph 27. View inside THMM1-1, a native mixed regeneration thicket, dominated by white ash, common apple, silky dogwood, red-osier dogwood, and common buckthorn with a typical mixed meadow groundcover



Photograph 28. View of a portion of THMM1-1 showing dominant white ash, along with a dense shrub stratum of dogwoods, buckthorn and choke cherry with a mixed meadow groundcover of weeds, grasses and forbs



Photograph 29. View of part of naturalized deciduous hedge-row (FODM11), situated along the north property boundary, west of the tributary valleylands, dominated by sugar maple, basswood, trembling aspen and white ash



Photograph 30. Northward view of FODM11 (naturalized deciduous hedge-row of sugar maple, basswood, white ash and trembling aspen with a groundcover of mixed meadow (MEMM3)



Photograph 31. To the west and contiguous with FOMM7-2, FOCM2-2 and FODM3-1 is a block of red-osier dogwood thicket (THDM2-12) in conjunction with dry-fresh mixed meadow (MEMM3)



Photograph 32. Dogwood shrub thicket (THDM2-12) dominated by red-osier dogwood, along with silky dogwood, white ash, common apple, common buckthorn, common elderberry, choke cherry, honeysuckle and buffaloberry



Photograph 33. View of a small block of THDM2-12 in the northwest corner, along the western property perimeter, dominated by mixed meadow (MEMM3), and scattered dogwoods, apple, hawthorn and white ash



Photograph 34. Northward view of tilled and fallow agricultural cropland (OAGM1) showing re-growth of grasses and weed on the top of the ploughed furrows, with sandy-loam soils



Photograph 35. Eastward view of a relatively large block of ploughed and barren agricultural cropland (OAGM1)



Photograph 36. Westward view of a strip of dry-fresh mixed meadow (MEMM3), dominated by awnless brome grass, wild carrot, cow vetch, common dandelion, field horsetail, clovers, agrimony, common buttercup and goldenrods



Photograph 37. View of a strip of mixed meadow (MEMM3), along interface of FODM4-2 and OAGM1, dominated by common grasses, weeds and forbs



Photograph 38. View of the north portion of SWD2-2, green ash mineral deciduous swamp, with associates of white elm, creeper, grape, eastern white cedar, willow and dogwoods that borders both sides of the intermittent tributary



Photograph 39. View further south of SWD2-2 green ash swamp showing a rich groundcover of ostrich fern, Virginia creeper, sensitive fern, spotted jewelweed, bittercress, Joe pye-weed, American brooklime and sedges



Photograph 40. View of southern portion of SWD2-2, dominated more by balsam poplar and trembling aspen mixed with green ash, borders both sides of the intermittent tributary, with a lush fern, sedge and forb groundcover



Photograph 41. View inside southern end of poplar treed swamp (SWDM4-5), dominated by trembling aspen, balsam poplar and green ash, with a lush groundcover of ferns, sedges and forbs, on both side of the tributary



Photograph 42. View of a small pocket of cattail mineral shallow marsh (MASM1-1), an inclusion in FOMM7-2, dominated by narrow-leaved cattail, spotted jewelweed, creeping buttercup, fringed loosestrife, and sedges



Photograph 43. Westward view of MASM1-1 showing cattails, horsetail, spotted jewelweed, sensitive fern and willow shrubs and dogwood shrubs



Photograph 44. View of seepage within MASM1-1, showing a groundcover of watercress, spotted jewelweed, sedges, and willow-herb



Photograph 45. View of the western end a wetland trough (MAMM1-2) characterized as cattail graminoid mineral meadow marsh, dominated by sensitive ferns, forget-me-not, spotted jewelweed, sedges and aquatic grasses



Photograph 46. Downgradient portion of cattail graminoid meadow marsh (MAMM1-2), with narrow-leaved cattail, sensitive fern, reed canary grass, fowl manna grass, water horehound, fowl manna grass and sedges



Photograph 47. Upgradient view of a seepage runoff channel through MAMM1-2 that drains eastward and eventually connects to the intermittent tributary in SWD2-2/SWDM4-5



Photograph 48. View of intermittent tributary at downgradient end near Osler Bluff Road, contained within FODM5-10, showing trickle flow and a rock/cobble substrate along with silty clayey-sands

Appendix D

Vascular Plant Species Observed on the Subject Lands

Scientific Name	Common Name	Status			Location														
					FODM3-1	FODM4-2	FODM5-10	FODM8-1	FOMM5-1	FOMM7-2	FOCM2-2	WOMM3-1	THMM1-1	FODM11	THDM2-12/MEMM3	OAGM1	MEMM3	SWD2-2/SWD4-5	MASM1-1
		Non-native	Rare in Ontario	Rare in Grey County															
<i>Acer negundo</i> L.	Manitoba Maple					X	X												
<i>Acer rubrum</i> L.	Red Maple						X												
<i>Acer saccharinum</i> L.	Silver Maple							X										X	X
<i>Acer saccharum</i> Marsh.	Sugar Maple					X	X			X				X					
<i>Achillea millefolium</i> L.	Common Yarrow	+												X	X	X			
<i>Actaea pachypoda</i> Eil.	White Baneberry									X									
<i>Actaea rubra</i> (Ait.) Willd.	Red Baneberry						X			X									
<i>Agrimonia gryposepala</i> Wallr.	Agrimony					X								X		X			
<i>Agropyron repens</i> (L.)	Quack Grass	+												X	X				
<i>Agrostis gigantea</i> Roth.	Redtop	+															X		
<i>Agrostis stolonifera</i> L.	Creeping Bent Grass																X		X
<i>Ambrosia artemisiifolia</i> L.	Common Ragweed										X			X		X			
<i>Anemone canadensis</i> L.	Canada Anemone					X	X										X		
<i>Anemone virginiana</i> L.	Thimbleweed					X	X										X		
<i>Apocynum androsaemifolium</i> L.	Spreading Dogbane	+					X				X					X			
<i>Arctium minus</i> (Hill) Bernh.	Common Burdock	+					X	X											
<i>Arisaema triphyllum</i> (L.) Schott	Jack-in-the-pulpit																		
<i>Asclepias incarnata</i> L.	Swamp Milkweed					X													X
<i>Asclepias syriaca</i> L.	Common Milkweed					X					X			X					
<i>Aster cordifolius</i> L.	Heart-leaved Aster													X					
<i>Aster novae-angliae</i> L.	New England Aster					X								X		X			
<i>Aster puniceus</i> L.	Purple-stemmed Aster																	X	X
<i>Barbarea vulgaris</i> R. Br.	Bittercress																		X
<i>Betula alleghaniensis</i> Britt.	Yellow Birch						X										X		
<i>Betula papyrifera</i> Marsh.	White Birch					X	X	X	X										
<i>Betula pendula</i> Roth	European Birch												X						
<i>Boehmeria cylindrica</i> (L.) Sw.	False Wood Nettle						X												
<i>Bromus inermis</i> Leys.	Smooth Brome Grass	+					X				X			X	X				
<i>Calamagrostis canadensis</i> (Michx.) Beauv.	Canada Blue-joint																		X
<i>Carex bebbii</i> (Bailey) Fern.	Bebb's Sedge																		X
<i>Carex blanda</i> Dew.	Distant Flowered Sedge						X												
<i>Carex deweyana</i> Schw.	Dewey's Sedge										X								
<i>Carex gracillima</i> Schw.	Graceful Sedge						X	X		X						X	X		
<i>Carex granularis</i> Muhl. ex Willd	Meadow Sedge						X				X								X
<i>Carex rosea</i> Schk. ex Willd.	Curly Wood Sedge																	X	
<i>Carex stipata</i> Muhl. ex Willd.	Awl-Fruited Sedge																	X	X
<i>Carex vulpinoidea</i> Michx.	Foxtail Sedge																		X
<i>Centaurea jacea</i>	Brown Knapweed										X								
<i>Centaurea maculosa</i> Lam.	Spotted Knapweed	+									X								
<i>Chrysanthemum leucanthemum</i> L.	Ox-eye Daisy	+									X	X	X		X				
<i>Cichorium intybus</i> L.	Chicory	+									X		X		X				
<i>Circaea lutetiana</i> L.	Enchanter's Nightshade					X	X	X	X	X						X			
<i>Cirsium arvense</i> (L.) Scop.	Canada Thistle	+									X				X				
<i>Cirsium vulgare</i> (Savi) Tenore	Bull Thistle	+									X				X				
<i>Clematis virginiana</i> L.	Virgin's-bower						X				X								
<i>Clinopodium vulgare</i>	Wild Basil							X	X		X		X		X				
<i>Conium maculatum</i>	Poison Hemlock						X									X			X
<i>Conyza canadensis</i> (L.) Cronq.	Horse-Weed					X					X								
<i>Cornus alternifolia</i> L.f.	Alternate-leaved Dogwood						X				X					X			
<i>Cornus amomum</i> Mill.	Silky Dogwood					X	X	X		X	X		X			X	X		
<i>Cornus stolonifera</i> Michx.	Red-osier Dogwood					X	X	X		X	X		X			X	X		
<i>Crataegus</i> Spp.	Hawthorn Spp.						X	X	X	X	X	X			X				
<i>Dactylis glomerata</i> L.	Orchard Grass	+									X		X	X	X				
<i>Daucus carota</i> L.	Wild Carrot	+									X		X	X	X				
<i>Dianthus armeria</i> L.	Deptford Pink	+									X		X		X				
<i>Diervilla lonicera</i> Mill.	Northern Bush Honeysuckle						X												
<i>Dipsacus fullonum</i> L.	Teasel	+											X						
<i>Dryopteris carthusiana</i> (Vill.) H.P.Fuchs	Spinulose Wood Fern							X	X										
<i>Echinocloa crus-galli</i>	Barnyard Grass	+												X					
<i>Echium vulgare</i> L.	Viper's-bugloss	+												X					
<i>Eleocharis</i> spp.	Spike-rush																	X	
<i>Elymus hystrix</i> L.	Bottle-brush Grass						X	X											
<i>Elymus repens</i> L.	Quackgrass										X								
<i>Epilobium hirsutum</i> L.	Hairy Willowherb	+					X												X
<i>Epilobium parviflorum</i> Schreb.	Small-flowered Willowherb	+					X									X			X
<i>Epipactis helleborine</i> (L.) Crantz	Helleborine	+					X	X											
<i>Equisetum arvense</i> L.	Field Horsetail						X	X							X				
<i>Equisetum palustre</i> L.	Marsh Horsetail															X			X
<i>Equisetum pratense</i> Ehrh.	Meadow Horsetail						X	X	X							X	X		
<i>Erigeron annuus</i> (L.) Pers.	Daisy Fleabane						X							X					
<i>Erigeron philadelphicus</i> L.	Philadelphia Fleabane													X					

Scientific Name	Common Name	Status			Location														
					FODM3-1	FODM4-2	FODM5-10	FODM8-1	FOMM5-1	FOMM7-2	FOCM2-2	WOMM3-1	THMM1-1	FODM11	THDM2-12/MEMM3	OAGM1	MEMM3	SWD2-2/SWD4-5	MASM1-1
		Non-native	Rare in Ontario	Rare in Grey County															
<i>Erysimum cheiranthoides</i> L.	Wormseed Mustard															X			
<i>Euonymus americanus</i>	Strawberry Bush							X											
<i>Eupatorium perfoliatum</i> L.	Boneset				X												X		X
<i>Euthamia graminifolia</i> (L.) Nutt.	Narrow-leaf Goldenrod																	X	
<i>Eutrochium maculatum</i> L.	Spotted Joe-Pye Weed				X			X									X		X
<i>Fagus grandifolia</i> Ehrh.	Beech				X														
<i>Fallopia scandens</i>	False Buckwheat													X					
<i>Festuca pratensis</i> Huds.	Meadow Fescue										X		X		X				
<i>Fragaria vesca</i> L.	Woodland Strawberry					X		X	X										
<i>Fragaria virginiana</i> Dcne.	Common Strawberry				X	X						X				X			
<i>Fraxinus americana</i> L.	White Ash				X	X		X	X		X		X		X				
<i>Fraxinus pennsylvanica</i> Marsh.	Green Ash					X										X			
<i>Galium aparine</i> L.	Cleavers	+																X	X
<i>Galium triflorum</i> L.	Fragrant Bedstraw				X													X	X
<i>Geranium robertianum</i> L.	Herb Robert	+			X	X		X										X	
<i>Geum aleppicum</i> Jacq.	Yellow Avens				X	X		X	X										
<i>Geum canadense</i> Jacq.	White Avens				X														
<i>Glyceria striata</i> (Lam.) A.S. Hitchc.	Fowl Manna Grass															X			X
<i>Hesperis matronalis</i> L.	Dame's-rocket	+									X	X	X		X				
<i>Hypericum perforatum</i> L.	Common St. John's-wort	+										X		X					
<i>Impatiens capensis</i> Meerb.	Spotted Jewelweed				X											X		X	X
<i>Inula helenium</i> L.	Elecampane	+												X				X	
<i>Juglans cinerea</i> L.	Butternut		END		X														
<i>Juglans nigra</i> L.	Black Walnut				X														
<i>Juncus effusus</i> L.	Common Rush																		X
<i>Juncus tenuis</i> Willd.	Path Rush										X		X						
<i>Laportea canadensis</i> (L.) Wedd.	Wood Nettle					X		X									X		
<i>Lepidium campestre</i> (L.) R. Br.	Field Pepper-grass	+												X	X				
<i>Lonicera tatarica</i> L.	Tartarian Honeysuckle	+			X						X		X						
<i>Lotus corniculatus</i> L.	Bird-foot Trefoil	+									X		X	X	X				
<i>Lycopus americanus</i> Muhl.	Cut-leaf Water-horehound															X			X
<i>Lycopus europaeus</i> L.	European Water-horehound															X		X	
<i>Lysimachia ciliata</i> L.	Fringed Loosestrife				X				X							X		X	
<i>Lythrum salicaria</i> L.	Purple Loosestrife																		
<i>Maianthemum canadense</i> Desf.	Wild Lily-of-the-valley				X														
<i>Maianthemum racemosum</i> (L.) Link	False Solomon's-seal				X	X													
<i>Maianthemum stellatum</i> (L.) Link	Starry False Solomon's-seal					X													
<i>Malus coronaria</i> (L.) Mill.	Common Crabapple										X		X						
<i>Malus pumila</i> Miller	Domestic Apple				X	X		X	X	X	X	X	X						
<i>Matteuccia struthiopteris</i> (L.) Todaro	Ostrich Fern				X											X			X
<i>Medicago lupulina</i> L.	Black Medic	+													X				
<i>Medicago sativa</i> L.	Alfalfa	+													X				
<i>Melilotus alba</i> Medic.	White Sweet-clover	+																	
<i>Mentha arvensis</i> L.	Wild Mint																		
<i>Myosotis laxa</i> Lehm.	Smaller Forget-me-not					X													X
<i>Myrrhis odorata</i>	Sweet Cicely							X											
<i>Nepeta cataria</i> L.	Catnip	+									X		X		X				
<i>Oenothera biennis</i> L.	Hairy Yellow Evening-primrose										X		X		X				
<i>Onoclea sensibilis</i> L.	Sensitive Fern				X	X			X							X		X	X
<i>Ostrya virginiana</i> (Mill.) K. Koch	Hop Hornbeam				X			X	X										
<i>Parthenocissus inserta</i> (A. Kerner) Fritsch	Virginia Creeper				X	X		X	X		X		X			X			
<i>Phalaris arundinacea</i> L.	Reed Canary Grass				X								X	X	X	X			X
<i>Phleum pratense</i> L.	Timothy	+											X						
<i>Physalis heterophylla</i> Nees	Clammy Ground-cherry													X					
<i>Pinus strobus</i> L.	White Pine				X								X						
<i>Pinus sylvestris</i> L.	Scotch Pine	+														X			
<i>Plantago lanceolata</i> L.	English Plantain	+														X			
<i>Plantago major</i> L.	Common Plantain	+									X		X		X				
<i>Poa annua</i> L.	Annual Blue Grass	+											X						
<i>Poa compressa</i> L.	Canada Blue Grass												X						
<i>Poa palustris</i> L.	Fowl Meadow Grass																		X
<i>Poa pratensis</i> L.	Kentucky Blue Grass	+											X	X	X				
<i>Polystichum acrostichoides</i> (Michx.) Schoff	Christmas Fern				X														
<i>Populus alba</i> L.	White Poplar							X				X							
<i>Populus balsamifera</i> L.	Balsam Poplar					X		X					X					X	
<i>Populus deltoides</i> Marsh	Carolina Poplar	+				X													
<i>Populus tremuloides</i> Michx.	Trembling Aspen				X	X		X	X			X	X			X			
<i>Potentilla anserina</i> L.	Silverweed	+																X	
<i>Potentilla recta</i> L.	Rough-fruited Cinquefoil	+											X		X				
<i>Prenanthes alba</i> L.	Common Lettuce				X														
<i>Prunella vulgaris</i> L.	Heal-all	+									X		X		X				
<i>Prunus serotina</i> Ehrh.	Black Cherry								X				X						
<i>Prunus virginiana</i> L.	Choke Cherry				X	X		X	X	X	X	X	X						
<i>Pteridium aquilinum</i> (L.) Kuhn	Eastern Bracken Fern	+			X	X		X	X		X		X						

Scientific Name	Common Name	Status			Location														
					FODM3-1	FODM4-2	FODM5-10	FODM8-1	FOMM5-1	FOMM7-2	FOCM2-2	WOMM3-1	THMM1-1	FODM11	THDM2-12/MEMM3	OAGM1	MEMM3	SWD2-2/SWD4-5	MASM1-1
		Non-native	Rare in Ontario	Rare in Grey County															
<i>Ranunculus acris</i> L.	Common Buttercup	+				X	X						X		X				
<i>Ranunculus repens</i>	Creeping Buttercup				X		X		X	X								X	X
<i>Rhamnus cathartica</i> L.	Common Buckthorn	+			X	X	X		X	X	X	X	X	X					
<i>Rhamnus frangula</i> L.	Glossy Buckthorn	+										X		X					
<i>Rhus radicans</i> L.	Poison-ivy				X		X	X	X			X				X			
<i>Rhus typhina</i> L.	Staghorn Sumac					X													
<i>Ribes cynosbati</i> L.	Pasture Gooseberry					X													
<i>Ribes rubrum</i> L.	Red Currant	+																	X
<i>Rosa multiflora</i> Thumb.	Multiflora Rose	+											X		X				
<i>Rubus allegheniensis</i> Porter	Black Raspberry					X			X				X						
<i>Rubus idaeus</i> L.	Wild Red Raspberry					X					X		X		X				
<i>Rubus flagellaris</i> L.	Northern Dewberry						X										X		
<i>Rumex crispus</i> L.	Curly Dock	+														X			
<i>Rumex orbiculatus</i> Gray	Greater Water Dock																		X
<i>Salix bebbiana</i> Sarg.	Bebb's Willow						X										X	X	
<i>Salix discolor</i> Muhl.	Pussy Willow						X										X	X	
<i>Salix eriocephala</i> Michx.	Missouri Willow						X										X		
<i>Salix petiolaris</i> Sm.	Slender Willow						X										X	X	
<i>Sambucus canadensis</i> L.	Common Elderberry												X				X		
<i>Sambucus pubens</i> L.	Red-berried Elder											X					X		
<i>Saponaria officinalis</i> L.	Bouncing-bet	+													X				
<i>Satureja vulgaris</i> (L.) Fritsch	Wild Basil																		
<i>Scirpus validus</i> Vahl.	Softstem Bulrush						X												X
<i>Setaria viridis</i>	Foxtail																		
<i>Shepherdia canadensis</i> (L.) Nutt.	Buffalo-berry											X		X					
<i>Silene noctiflora</i> L.	Night-flowering Catchfly	+													X				
<i>Silene vulgaris</i> (Moench) Garcke	Bladder Campion	+												X					
<i>Sium suave</i> Walt.	Water-parsnip																X		X
<i>Solanum dulcamara</i> L.	Deadly Nightshade	+				X	X										X		X
<i>Solidago altissima</i> L.	Tall Goldenrod				X	X						X		X	X				
<i>Solidago canadensis</i> L.	Canada Goldenrod				X	X						X		X	X				
<i>Solidago flexicaulis</i> L.	Zig-zag Goldenrod									X									
<i>Solidago juncea</i> Ait.	Early Goldenrod											X			X				
<i>Sonchus arvensis</i> L.	Field Sow-thistle	+										X		X	X				
<i>Sorbus aucuparia</i> L.	European Mountain-ash	+											X						
<i>Streptopus roseus</i> Michx.	Rose Twisted-stalk					X													
<i>Taraxacum officinale</i> Weber	Common Dandelion	+				X		X	X			X		X	X				
<i>Thuja occidentalis</i> L.	Eastern White Cedar				X			X	X	X							X		
<i>Tilia americana</i> L.	Basswood					X	X					X	X						
<i>Tragopogon dubius</i> Scop.	Goat's-beard	+										X							
<i>Tragopogon pratensis</i> L.	Meadow Goat's-beard	+										X		X					
<i>Trifolium aureum</i> Poll.	Low Hop Clover	+										X							
<i>Trifolium hybridum</i> L.	Alsike Clover	+										X							
<i>Trifolium pratense</i> L.	Red Clover	+			X							X			X				
<i>Trifolium repens</i> L.	White Clover	+										X			X				
<i>Tussilago farfara</i> L.	Coltsfoot	+				X											X		X
<i>Typha angustifolia</i> L.	Narrow-leaved Cattail					X												X	
<i>Typha latifolia</i> L.	Broad-leaved Cattail					X												X	
<i>Ulmus americana</i> L.	White Elm					X	X	X			X	X					X		
<i>Verbascum thapsus</i> L.	Common Mullein	+										X		X					
<i>Verbena hastata</i> L.	Blue Vervain																X		
<i>Veronica americana</i> (Raf.) Schwein.	American Brooklime	+															X		X
<i>Veronica officinalis</i> L.	Common Speedwell	+					X	X		X									
<i>Viburnum acerifolium</i> L.	Maple-leaved Viburnum					X													
<i>Vicia cracca</i> L.	Cow Vetch	+										X		X	X				
<i>Vicia tetrasperma</i> (L.) Schreb.	Sparrow Vetch	+												X					
<i>Viola palustris</i>	Marsh Violet																X		X
<i>Viola pubescens</i> Ait.	Downy Yellow Violet					X			X										
<i>Viola sororia</i> Willd.	Common Blue Violet								X				X						
<i>Vitis riparia</i> Michx.	Riverbank Grape				X	X	X	X		X	X		X				X		
<i>Waldsteinia fragarioides</i> (Michx.) Tratt.	Barren Strawberry							X											

+ - Non-native species
 Endangered (END), Threatened (THR), Special Concern (SC) - Rare in Ontario
 RR - Rare in Grey County
 Aster = *Symphyotrichum*

Appendix E

Breeding Birds Observed on the Subject Lands

Appendix E. Bird Species List for Blue Vista (Nederland) Property, Town of the Blue Mountains

FAMILY	SCIENTIFIC NAME	COMMON NAME	Point Count Station ³								Breeding Evidence ¹	Conservation Rank Information ²				
			1	2	3	4	5	6	7	8		S RANK	G RANK	SARO STATUS	COSEWIC Status	
Accipitridae	<i>Buteo jamaicensis</i>	red-tailed hawk	X									Observed	S5	G5		
Alcedinidae	<i>Megasceryle alcyon</i>	belted kingfisher		X								Observed	S4B	G5		
Anatidae	<i>Branta canadensis</i>	Canada goose	FO									None	S5	G5		
Anatidae	<i>Anas platyrhynchos</i>	mallard	FO									None	S5	G5		
Anatidae	<i>Cathartes aura</i>	turkey vulture	FO									None	S5B	G5		
Ardeidae	<i>Ardea herodias</i>	great blue heron	FO									None	S4	G5		
Cardinalidae	<i>Cardinalis cardinalis</i>	northern cardinal		P,P	S	C,C	P,P	S				Probable	S5	G5		
Cardinalidae	<i>Pheucticus ludovicianus</i>	rose-breasted grosbeak					C,C					Probable	S4B	G5		
Cardinalidae	<i>Passerina cyanea</i>	indigo bunting					C					Possible	S4B	G5		
Certhiidae	<i>Certhia americana</i>	brown creeper			X	X						Observed	S5B	G5		
Charadriidae	<i>Charadrius vociferus</i>	killdeer	X									Observed	S5B,S5N	G5		
Columbidae	<i>Zenaida macroura</i>	mourning dove	C,C	C	P	C,C	C,C	P		C		Probable	S5	G5		
Corvidae	<i>Corvus brachyrhynchos</i>	American crow	C	C	C,C		C,C	C,C	C	C		Probable	S5B	G5		
Corvidae	<i>Cyanocitta cristata</i>	blue jay	C	C	C,C		C,C					Probable	S5	G5		
Emberizidae	<i>Poocetes gramineus</i>	vesper sparrow					C					Possible	S4B	G5		
Emberizidae	<i>Passerculus sandwichensis</i>	savannah sparrow					C					Possible	S4B	G5		
Emberizidae	<i>Melospiza melodia</i>	song sparrow	C				C,P					Probable	S5B	G5		
Emberizidae	<i>Zonotrichia albicollis</i>	white-throated sparrow			C							Possible	S5B	G5		
Emberizidae	<i>Spizella passerina</i>	chipping sparrow		C	C,C		P		P			Probable	S5B	G5		
Fringillidae	<i>Carduelis tristis</i>	American goldfinch	S		P		P	P				Probable	S5B	G5		
Icteridae	<i>Agelaius phoeniceus</i>	red-winged blackbird	S	P			P	S				Probable	S4	G5		
Icteridae	<i>Molothrus ater</i>	brown-headed cowbird	C			C	C,C	C				Probable	S4B	G5		
Icteridae	<i>Quiscalus quiscula</i>	common grackle	C	C	C,C	C,C	C,C			C		Probable	S5B	G5		
Icteridae	<i>Icterus galbula</i>	Baltimore oriole	S			C,P		S,P				Probable	S4B	G5		
Laridae	<i>Larus delawarensis</i>	ring-billed gull	FO									None	S5B,S4N	G5		
Mimidae	<i>Dumetella carolinensis</i>	gray catbird		S	S,S		S,S	S				Probable	S4B	G5		
Mimidae	<i>Toxostoma rufum</i>	brown thrasher					S,S					Probable	S4B	G5		
Paridae	<i>Poecile atricapillus</i>	black-capped chickadee	C	C,C	C,C	C	C,P	C,C	C	C		Probable	S5	G5		
Parulidae	<i>Geothlypis trichas</i>	common yellowthroat		S,S								Probable	S5B	G5		
Parulidae	<i>Setophaga petechia</i>	yellow warbler	S,P				S,V	S,P				Probable	S5B	G5		
Parulidae	<i>Setophaga coronata</i>	yellow-rumped warbler			C							Possible	S5B	G5		
Parulidae	<i>Mniotilta varia</i>	black-and-white warbler		C,C	C							Probable	S5B	G5		
Phasianidae	<i>Meleagris gallopavo</i>	wild turkey						X				Observed	S5	G5		
Picidae	<i>Colaptes auratus</i>	northern flicker			C,C	C,C						Probable	S4B	G5		
Picidae	<i>Picoides pubescens</i>	downy woodpecker		X	C,C	X						Probable	S5	G5		
Picidae	<i>Picoides villosus</i>	hairy woodpecker			X	C,C						Probable	S5	G5		
Picidae	<i>Sphyrapicus varius</i>	yellow-bellied sapsucker		C,C		C,C				X		Probable	S5	G5		
Picidae	<i>Dryocopus pileatus</i>	pileated woodpecker		X		C						Possible	S5	G5		
Sittidae	<i>Sitta canadensis</i>	red-breasted nuthatch		C,C	X	X						Probable	S5	G5		
Sturnidae	<i>Sturnus vulgaris</i>	European starling	X									Observed	SNA	G5		
Troglodytidae	<i>Troglodytes aedon</i>	house wren			C,V	C,C		C				Probable	S5B	G5		
Turdidae	<i>Hylocichla mustelina</i>	wood thrush			S							Possible	S4B	G4	THR	SC
Turdidae	<i>Turdus migratorius</i>	American robin	S	C,C	C,C	C	NE	C,C		C		Confirmed	S5B	G5		
Tyrannidae	<i>Contopus virens</i>	eastern wood-pewee			C							Possible	S4B	G5	SC	SC
Tyrannidae	<i>Myiarchus crinitus</i>	great crested flycatcher				C	C,C	C,C				Probable	S4B	G5		
Tyrannidae	<i>Tyrannus tyrannus</i>	eastern kingbird	C,C				C,C					Probable	S4B	G5		
Vireonidae	<i>Vireo gilvus</i>	warbling vireo			C		C,C					Probable	S5B	G5		
Vireonidae	<i>Myiarchus crinitus</i>	red-eyed vireo		C,C	C,C							Probable	S4B	G5		

Point Count Survey Duration - at least 10 minutes/station

Dawn Bird Survey Observation Conditions:

June 8, 2018; Start Time 0500hr/ End Time 08:30hr; Observer - David G. Cunningham (Cunningham Environmental Associates)

June 22, 2018; Start Time 05:15hr/ End Time 0900hr; Observer - David G. Cunningham (Cunningham Environmental Associates)

¹Highest level of breeding evidence detected based on Ontario Breeding Bird Atlas (OBBA) criteria and Breeding Evidence Codes

²Conservation Rank - from Ontario Ministry of Natural Resources & Forestry, Natural Heritage Information Centre, Species at Risk in Ontario Lists and Environment Canada/COSEWIC Lists

S-rank - S1 - Extremely Rare, S2 - Very Rare, S3 - Rare to Uncommon, S4 - Common, S5 - Very Common, NAR - Not At Risk

G-Rank - G1 - Critically Imperiled, G2 - Imperiled, G3 - Vulnerable, G4 - Apparently Secure, G5 - Secure

³Breeding Evidence Codes: e.g. S Singing male detected during 2017 surveys

Breeding Evidence Breeding Evidence Codes

None FO - Species observed Flying Over showing no signs of use of subject or adjacent lands

Observed X - Species observed, no evidence of breeding

Possible H - Species observed in its breeding season in suitable nesting habitat

Note S or C - Singing male(s) present (S), or breeding calls heard (C), in suitable nesting habitat in breeding season

Probable P - Pair observed in suitable nesting habitat in nesting season

Probable D - Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.

Probable V - Visiting probable nest site

Probable A - Agitated behaviour or anxiety calls of an adult

Probable B - Brood Patch on adult female or cloacal protuberance on adult male

Probable N - Nest-building or excavation of nest hole.

Confirmed DD - Distraction display or injury feigning.

Confirmed NU - Used nest or egg shells found (occupied or laid within the period of the survey)

Confirmed FY - Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

Confirmed AE - Adult leaving or entering nest sites in circumstances indicating occupied nest

Confirmed FS - Adult carrying fecal sac.

Confirmed CF - Adult carrying food for young.

Confirmed NE - Nest containing eggs.

Confirmed NY - Nest with young seen or heard

Note : Possible if only one observation of S or C, Probable if evidence of S or C in same place on two or more dates a week or more apart

Appendix F

**GPS Coordinates for Butternut Trees Observed on the
Subject Lands**

Appendix F. Nederland Property, Butternut GPS Waypoints

Butternut No.	Waypoint	UTM	Zone	Easting	Northing
6	289	NAD83	17T	556452	4927964
5	290	NAD83	17T	556457	4927971
4	291	NAD83	17T	556472	4927978
3	292	NAD83	17T	556476	4927983
2	293	NAD83	17T	556487	4927987
1	294	NAD83	17T	556493	4927986
7	295	NAD83	17T	556426	4927974
8	296	NAD83	17T	556416	4927987
9	297	NAD83	17T	556417	4927976
10	298	NAD83	17T	556408	4927982